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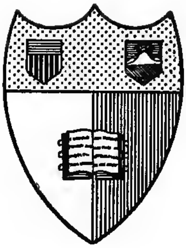

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COUNTY PALATINE

OF LANCASTER.

Lancashire Education Committee.

HIGHER EDUCATION SUB-COMMITTEE.

AGRICULTURAL DEPARTMENT.

Scheme of Agricultural Education

TO BE CARRIED OUT AT

The County Council Farm, Hutton,

The County Council Agricultural School, Harris Institute,
Preston, and in

Various Parts of the County,

During Session 1912-1913.

H. LLOYD SNAPE, D.Sc., Ph.D.,
Director of Education.

Education Department,
County Offices, Preston,
June, 1912.

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AGRICULTURAL SUB-COMMITTEE.

Representatives of the Lancashire Education Committee:

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Vice-Chairman:

PHILIP PARK, Esq.

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Vice-Chancellor Sir Alfred Dale
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Representatives of the Royal Lancashire Agricultural Society:

John Blundell, Esq.
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R. B. Neilson, Esq.
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COUNTY COUNCIL FARM, HUTTON.

STAFF.

SECRETARY OF AGRICULTURE:

Thomas Milburn, Ph.D., N.D.A., N.D.D.

DAIRY AND POULTRY SCHOOLS:

Matron	Miss M. M. Macqueen.
Assistant Matron	Miss M. Knowles.

DAIRY SCHOOL:

Dairying	Miss M. M. Macqueen.
Cheese-making	Miss M. Knowles.
Dairy Farming	Thomas Milburn, Ph.D., N.D.A., N.D.D. R. C. Gaut, M.Sc., N.D.A., N.D.D. A. W. Patten, B.Sc., N.D.D. A.C.P.
Dairy Chemistry	Harold Crofts, M.Sc.

POULTRY SCHOOL:

Poultry-keeping	C. H. Dobbin. Miss K. H. Arthur.

HORTICULTURE:

Instructor	A. G. Sowman.
Head Gardener	J. Gillett.

FARM:

Bailiff and Instructor in Stock-judging	R. Moffat.

ADVISORY AND MIGRATORY WORK:

Agriculture	Thomas Milburn, Ph.D., N.D.A., N.D.D. R. C. Gaut, M.Sc., N.D.A., N.D.D. A. W. Patten, B.Sc., N.D.D. A.C.P.
Horticulture	A. G. Sowman.
Poultry-keeping	C. H. Dobbin.
Dairying	Miss A. Myerscough, N.D.D.
Cheese-making	Joseph Gornall. R. Richardson, N.D.A.

COUNTY COUNCIL AGRICULTURAL SCHOOL,

HARRIS INSTITUTE, PRESTON.

STAFF.

Principal and Secretary of the Harris Institute, Preston:

T. R. Jolly, F.C.I.S.

LECTURERS:

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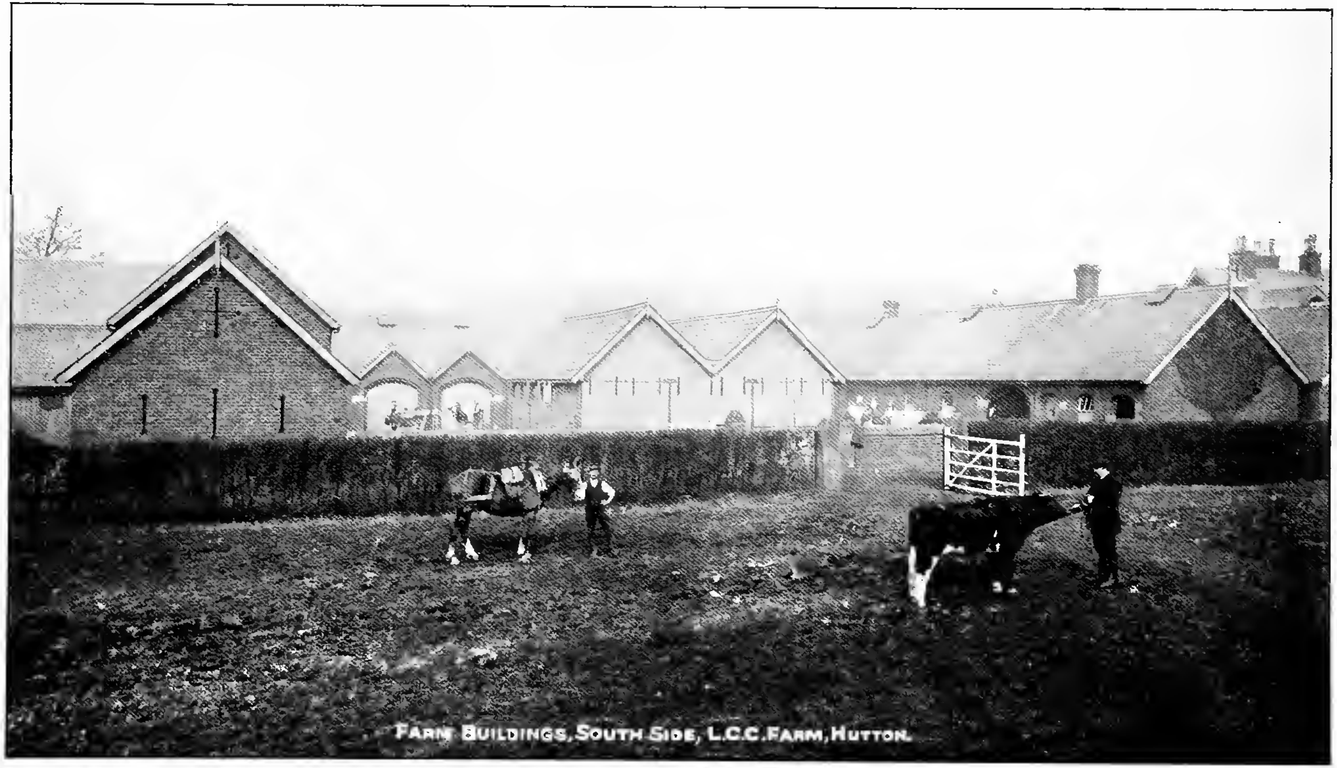
Dairy Farming	A. W. Patten, B.Sc., N.D.D., A.C.P.
Chemistry	R. H. Jones, M.Sc., F.C.S.
Agricultural Chemistry	Harold Crofts, M.Sc.
Agricultural Bacteriology and Zoology	A. W. Patten, B.Sc., N.D.D., A.C.P.
Agricultural Botany and Geology	J. Harrison, A.R.C.Sc.
Building Construction	W. Rawcliffe.
Veterinary Science	C. Blackhurst, M.R.C.V.S.
Land Surveying	W. Rawcliffe.
Engineering	G. E. Gittins, A.I.E.E. E. C. Moyle, A.R.C.Sc. F. W. Walker, 1st. Dip.M.E.
Physics and Mechanics	G. E. Gittins, A.I.E.E.
Mathematics	J. T. Corkill, B.A., Inter. B.Sc.
Mensuration	R. C. Gaut, M.Sc., N.D.A. N.D.D.
English	Joshua Hasenclever.
Book-keeping	V. E. Collinge, A.C.I.S., F.Inc.S.T.
Drawing	A. R. Gladwell, A.R.C.A.
Woodwork	S. Rutter, Hons. Medallist.
Cookery	Miss M. J. Dawson.



Farm Buildings, South Side, L.C.C. Farm, Hutton.

A—EDUCATIONAL WORK AT THE COUNTY COUNCIL FARM, HUTTON, NEAR PRESTON.

Telegraphic Address :
County Council Farm, Longton, Lancs.
Telephone : 12, Longton.

Station : Passenger and Goods.
"Hutton and Howick," on the
Lancashire and Yorkshire Railway.

COUNTY FARM.

The County Farm, consisting of 329 acres, is situated in the Townships of Hutton and Howick, a little more than three miles from Preston, and within ten minutes' walk from Hutton and Howick Station, which lies on the direct line from Preston to Southport.

The whole of the Farm, with the exception of 27 acres, is now the property of the County Council. Considerable alterations have been made on the land since it came into their possession, and further improvements are contemplated. Most of the Farm is laid down to grass, but part of the land recently taken over is being ploughed up with a view to providing more roots for the Dairy Stock. A portion of the Farm is reserved for Agricultural Demonstration Plots, on which are cultivated typical examples of Farm and Garden Crops. The live stock consists of 4 horses, 128 head of non-pedigree shorthorn cattle, and about 100 pigs.

Manurial, Feeding, and other Experiments are conducted at the Farm.

The permanent Dairy and Poultry Schools are located on this Farm, where a students' hostel, classrooms, and laboratories have been provided.

During recent years the accommodation has been found quite inadequate to cope with the increased number of students applying for admission, many of whom have had to wait a considerable time before they could be admitted. In order to relieve this congestion, the Agricultural Committee, with the sanction of the Education Committee, decided to build new Dairies, Hostel, and other buildings. The new Dairies will be erected in the field at the south side of the Farm, and the new Hostel will take the form of an Annexe to the existing School House; it is hoped that the whole of these premises will be finished before April next.

The following quantities of Dairy Produce were made at the Farm and disposed of during the past year:—7,335 lbs. of Butter and 37,846 lbs. of Cheese (including Lancashire, Cheddar, Stilton, Wensleydale, and Cream Cheese); also 19,789 Quarts of Whole Milk, 5,142 Quarts of Separated Milk, and 652 Quarts of Cream were sold during the year.

The Poultry Runs cover an area of about eight acres on the north-west side of the Farm; where lecture rooms, fattening sheds, trussing room, incubator room, model poultry houses, and extensive runs have been erected.

From 600 to 1,000 head of Poultry are kept. These comprise the following breeds:—Ancona, Rhode Island Reds, White Leghorn, Buff Orpington, Buff Rock, Faverolles, Houdan, Indian Game, Speckled Sussex, Light Sussex, White Orpington, and White Wyandotte; also Aylesbury Ducks, Indian Runner Ducks, and Turkeys. Some of these are used for pure breeding, some for cross breeding, and others for laying or fattening purposes. Nearly 900 head of Poultry were sold during 1911-12, and 12,000 eggs.

During the past year a Horticultural Station has been established, four acres of land at the north-east corner of the Farm being set aside for the purpose.

The garden is purely educational and experimental, and is not established with a view to profit, though practically the whole of the work will have a distinctly commercial value.

Botanical beds have been provided for the use of Students.

For the market grower, various fruits and vegetables are grown, and tested as to their market value.

For the fruit farmer, experiments have been arranged to demonstrate the results of the various methods of planting, pruning, training, and spraying of fruit trees; the effect of lime and manure; and the prevention and destruction of insect and fungoid pests.

Provision is also made for training Elementary School Teachers and a limited number of Students in Horticulture.

A daily record is kept of the rainfall, the temperature of the atmosphere, both maximum and minimum, dewpoint, humidity of atmosphere and subsoil, and the amount of sunshine. These records are taken at 9 a.m. each day.

A guide to the above station has been prepared, copies of which can be obtained from the Director of Education, County Offices, Preston.

It will thus be seen that every facility is offered to those who will subsequently engage in agricultural, avicultural, and horticultural careers, not only to obtain a thorough practical acquaintance with all the ordinary operations connected with a Dairy and Poultry Farm and Garden, but also to receive instruction in the scientific principles underlying the same.

VISITING DAYS.

The public are invited to visit the Farm, the Dairies, and the Poultry Runs from 10 a.m. to 4 p.m. on Tuesdays and Thursdays, and the Horticultural Station on the same days up to 5 p.m. Parents or Guardians of the Dairy or Poultry Students are also permitted to visit the Farm on Saturday. Admission, in all cases, is by ticket, which can be procured from the Director of Education, County Offices, Preston.

GENERAL INFORMATION REGARDING THE DAIRY AND POULTRY SCHOOLS.

A limited number of *residents* in the Administrative County of Lancaster (which includes all places within the area of Lancashire, *except* Stalybridge and Todmorden, and the County Boroughs of Barrow-in-Furness, Blackburn, Blackpool, Bolton, Bootle, Burnley, Bury, Liverpool, Manchester, Oldham, Preston, Rochdale, St. Helens, Salford, Southport, Stockport, Warrington, and Wigan), over 15 years of age, *and approved by the Committee*, can receive training in the theory and practice of Butter-making, Cheese-making, Milk-sterilization, and Poultry-keeping. Board and lodging will be provided for the students at a nominal charge, on condition that they remain for a period of not less than nine weeks. The Fees for the various Courses are given on page 13.

Persons not residing within the Administrative County of Lancaster are, *if approved by the Committee*, accepted as Students at the School on payment of fees in accordance with the scale given on page 13.

Students are required to make *separate application for permission to attend each Course*, and each application must be approved by the Committee.

All Students applying to attend the Courses of Instruction at the County Council Farm, Hutton, must furnish, *when making their application*, a certificate as to character. Before joining the Classes they must also furnish a certificate showing that they have been vaccinated within the previous five years, a medical certificate as to general health and freedom from cutaneous disease, and must make a declaration that they have not been exposed to infectious disease for at least three weeks prior to joining the Classes at the Farm.

Each applicant will be furnished with a printed copy of the Rules and Regulations laid down by the Committee, and will be required, before being admitted, to sign a form undertaking to comply with all the said Rules and Regulations.

These Rules and Regulations contain a statement of the work that has to be done by each Student, and describe the conduct to be observed in the House, Dairies, and Shippons ; they also govern leave of absence and visits from the friends of the Students.

SCHOOL HOUSE, LANCASHIRE COUNTY COUNCIL FARM, HUTTON.

FEES FOR DAIRY AND POULTRY STUDENTS.

1.—*For County Students who, in the opinion of the Agricultural Sub-Committee, are the children of bona-fide farmers, farm labourers, or others closely connected with Agriculture, living in the School House or Hostel :—*

7s. 6d.* per week for board and lodging, no fee for tuition	For complete courses.
7s. 6d. per week for board and lodging	For shorter courses.
5s. per week for tuition	

2.—*For other County Students living in the School House or Hostel :—*

12s. 6d. per week for board and lodging	For complete courses of instruction.
10s. per week for tuition	
12s. 6d. per week for board and lodging	For shorter courses.
12s. 6d. per week for tuition	

3.—*For Non-County Students living in the School House or Hostel :—*

10s. per week for board	For complete courses of instruction.
2s. 6d. per week for lodging	
£1 per week for tuition	
10s. per week for board	For shorter courses.
2s. 6d. per week for lodging	
£1 10s. per week for tuition	

NOTE.—All Fees are payable in advance.

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*The Committee may, at their discretion, refund this Fee to those Students who obtain not less than 75 per cent. of the total marks in the Examination held at the close of each Course, provided they are the sons or daughters of Tenant Farmers, Farm Labourers, or others closely connected with Agriculture, and their conduct has been satisfactory.

THE DAIRY SCHOOL.

COURSES OF INSTRUCTION IN DAIRY WORK.

1.—Junior Dairy Course.

Duration of each Course—9 weeks' Courses for Female Students only commence in January, March, and August, and for Male Students only, in October.

Practical Instruction is given in Milking, Butter-making, the making of one variety of Hard Cheese, the making of Cream Cheese, Separating, Milk Testing, and the Sterilization of Milk and Cream.

Lectures are given on Dairying, Dairy Farming, and Dairy Chemistry by the County Council Teaching Staff.

Students may attend lectures on Preliminary Poultry-keeping on three days each week, in conjunction with the above Course.

2.—Advanced Dairy Course.

Duration of Course—14 weeks, commencing in May, for Female Students only.

Instruction in this Course is given on the same subjects as in the Junior Dairy Course, but in a more extended form, and includes, in addition, instruction in the making of other varieties of cheese, in Dairy Bacteriology, and in Book-keeping.

3.—Dairy Diploma Course.

Duration of Course—14 weeks, commencing in May, for Female Students only.

This Course includes Instruction in Dairy Chemistry, Dairy Bacteriology, Milking, Butter-making, Sterilizing, and in the making of each of the following varieties of Cheese :—(i.) Hard-pressed, (ii.) Veined or Blue-moulded, (iii.) Soft. General management of a Dairy, and of a Dairy Farm.

The Course also covers the whole of the Syllabus of the Examination in the Science and Practice of Dairying for the National Dairy Diploma, including Poultry Work.

THE HOSTEL, L.C.C. FARM, HUTTON.

CERTIFICATES AND DIPLOMA.

Dairy Certificates.

1.—The *Junior Certificate* is awarded to all who have satisfied the Committee in the Examination held at the end of each Junior Course.

2.—The *Advanced Certificate* is awarded to all who have already obtained the Junior Certificate, and who have satisfied the Committee in the Examination held at the end of the Advanced Course.

General Conditions Governing the Award of Certificates.

(*a*)—No Candidate will be awarded a Certificate who does not pass in each of the ordinary subjects of the Examination held at the termination of the corresponding course of study.

(*b*)—Sterilization and Preliminary Poultry-keeping will be regarded as extra subjects for Students taking a Dairy Course, and success in these subjects will be separately specified on the Dairy Certificates.

(*c*)—No Candidate who has gained less than 50 per cent. of the marks in any subject in the Examinations will be eligible for a Certificate.

(*d*)—No Certificate will be granted to a Candidate who has failed to pass in one or more of the ordinary subjects of an Examination, until he or she passes in the whole of the subjects in some subsequent Examination.

(*e*)—That the conduct of the Student has been satisfactory.

Dairy Diploma.

The *Diploma in Dairying* is awarded on the following conditions to Students attending the Dairy School at Hutton :—

(*a*) That the Students have attended the Junior and Advanced Dairy Courses, and have satisfied the Committee in the Examination held at the end of each Course.

(*b*) That the Students have attended at least two Sessions at the County Council Agricultural School, and have satisfied the Committee in the various terminal examinations.

(*c*) That the Students have satisfied the Committee that they have had at least twelve months' practical work in a Dairy, or on a Dairy Farm, other than at Hutton, previous to completing the two years' course at the Agricultural School.

(*d*) That the Students have attained 18 years of age prior to entrance on the Diploma Course.

(*e*) That the Students have regularly attended the Classes arranged for the Diploma Course at the County Council Dairy School, and have satisfied the Committee in all subjects of the Examination held at the end of the Course, and have gained at least 70 per cent. of the total maximum number of marks obtainable.

(*f*) That the conduct of the Students during the various Courses of study has been satisfactory.

The Diploma will be marked " With Distinction " in the case of those Students who have gained over 80 per cent. of the total maximum number of marks obtainable in the Final Examination.

NOTE.—The selection of Candidates for the Dairy and Poultry Classes, and also for the award of Certificates or Diplomas, is entirely at the discretion of the Committee.

Entry forms may be found on pages 66-68.

Fees for the Courses are given on page 13.

SHORTHORN DAIRY COWS IN MILK L.C.C. FARM, HUTTON.

SYLLABUSES OF DAIRY CLASSES FOR SESSION 1912-13.

I.—For Junior Dairy Students.

Duration of Course—9 weeks.

Dairying.

Milk.—Nature and composition ; causes of variation ; laws and regulations relating to the sale of milk ; production of clean, sound milk ; wholesale and retail milk selling ; straining, cooling, &c.

Bacteria.—Their influence on milk ; use and preparation of starters ; pasteurization ; cleanliness and care of utensils.

The Butter Dairy.—Construction ; utensils, etc. ; methods of management ; laws relating to the sale of butter and cream.

Cream.—Different systems of separation ; causes which influence quality and thickness ; pasteurizing and ripening of cream.

Butter.—Cream and whole milk churning ; influence of temperature, etc. ; method of washing, working, salting, and making up ; common faults of butter and their prevention ; storage and sale of butter ; judging of butter ; prices of butter ; value of separated milk and butter-milk.

The Cheese Dairy.—Construction and utensils ; classification of cheese and some comparisons ; constituents of milk and their influence in cheese-making ; effects of temperature ; acidity—testing for acidity ; rennet, its use, source, and properties.

Cheese.—Methods of making quick, medium, and slow ripening Lancashire cheese ; cream cheese ; value of whey ; ripening rooms ; defects of Lancashire cheese and their prevention ; marketing of Lancashire cheese and prices.

Sterilizing.—Quality and suitability of milk ; filtering ; bottling ; method of sterilizing ; storing and marketing ; use of milk ; faults and their prevention ; value of milk.

Practical Work.—Milking ; butter-making ; making of Lancashire and cream cheeses ; separating, milk-testing, and sterilization of milk and cream ; cleansing of utensils, etc.

Dairy Chemistry.

Forms of Matter.—Solid, liquid, and gaseous bodies.

Temperature.—Its measurement ; thermometers.

Elements and Compounds.—Oxygen and oxidation ; acids ; bases ; salts.

Water.—Hard and soft water.

Milk.—General composition ; variations in composition ; milk standard.

Determination of Fat in Milk.—Mechanical methods—Gerber test.

Specific Gravity of Milk.—Its determination by specific gravity bottle and by lactometer.

Rennet.—Effect on milk.

Acidity of Milk, Cream, Whey, &c.—Estimations of acidity; acidimeter.

Dairy Farming.

Dairy Cattle.—Points of a good dairy cow; selection of cattle for dairy purposes.

Management of Dairy Cattle.—Housing and treatment during the summer and winter months; milking; drying off; period of lactation and gestation; prevention and first-aid treatment of milk fever; inflammation of the udder; treatment of common external parasites.

Feeding of Dairy Cattle.—Suitable rations for summer and winter; preparation of foods and methods of feeding; economical use of feeding-stuffs.

Calves.—Treatment and rearing; weaning; milk substitutes; calf-house; diseases—hoose and scour.

Dairy By-products.—Composition, use, and value as foods for calves and pigs.

Preliminary Poultry-keeping.

Junior Dairy Students are permitted to attend the Poultry Department for lectures and practical work on Monday, Wednesday and Thursday afternoons. Those who so attend are examined in the preliminary part of that Course. (See page 24.)

LECTURE ROOM & LABORATORY, L.C.C. FARM, HUTTON.

II.—For Advanced Dairy Students.

Duration of Course—14 *weeks.*

Dairying.

Milk.—Composition and variability; colostrum; milk records; influences in cowsheds; milk taints and their prevention; filtering; refrigeration; pasteurization; sterilization; preservation; laws and regulations relating to the sale of milk; conveyance and sale of milk to towns and factories; milk testing; milk contracts; payment for milk on a basis of quality.

Systems of Dairying.—Milk and cream selling; butter and cheese making; equipment and its cost for different systems; comparative returns.

Dairy Buildings.—Construction, etc., for different systems.

Butter.—Cream—different methods of separation; types of separators, their construction and management; composition of cream and its control; calculation of percentages; testing; methods of ripening; estimating acidity; Devonshire cream; types of churns and selection; methods of manufacture and comparisons; selection of butter-workers, driers, etc.; washing, salting, colouring, packing, storing, marketing; how composition and quality are affected; laws and regulations regarding the sale of butter; faults of butter and their prevention; judging of butter; butter ratio.

Cheese.—Classification of cheese, with characteristics; influence of each constituent in the making and ripening of cheese; methods of ascertaining the suitability of milk for cheese-making; estimation of acidity and comparison of methods; use of starters and pure cultures; manufacture of colouring matter and rennet; detection of bad samples; methods of making Lancashire, Cheddar, Stilton, Wensleydale, and Coulommier; influences of temperature, acidity, moisture, salt, &c.; ripening of cheese and conditions necessary for different types; defects of cheese and their prevention; regulation of temperature and moisture; marketing of cheese; yield and comparative prices of various cheeses; judging cheese; cold storage and necessary machinery.

Dairy By-products.—Skim-milk; butter-milk; whey.

Practical Work.—Milking; butter-making; the making of the following kinds of cheese—Lancashire, Cheddar, Stilton, and Coulommier; separating; milk-testing; sterilization of milk and cream; cleansing of utensils.

Dairy Chemistry.

General.—Solids, liquids, gases; temperatures and thermometers; solution and suspension.

Water.—Kinds suitable and unsuitable for dairy purposes.

The Chief Properties of—Nitrogen, phosphoric acid, potash, soda, common salt, carbon dioxide, sugar, starch, fats and oils, albuminoids.

Milk and Colostrum.—General composition; variations in composition of milk; mechanical methods of analysis.

Rennet.—Nature and use in dairy work; acidity and the curdling of milk; the acidimeter.

Preservatives.—In milk and cream.

Dairy Products.—General composition; margarine.

Removal of Important Constituents from the Soil.—By sale of milk, cheese and butter.

Foods.—General composition: functions of the various constituents. Relation of food to soil fertility.

Dairy Farming.

Pastures and Meadows.—Management; grazing and haymaking; manuring.

Crops.—Suitable rotation for a dairy farm; manuring of the crops.

Dairy Cattle.—British dairy cattle; characteristics; breeding; selections for dairying purposes.

Feeding.—The principles of feeding; influence of common foods on the yield and composition of milk; classification of foods and substitution of one food for another.

Pigs.—Breeds; management; suitable rations, including separated milk, skim and butter-milk, whey, &c.

Bacteriology.

(*Half-course.*)

Moulds.—Common species and their effects on various dairy products.

Bacteria.—Their forms, methods of increase and growth; the principal kinds met with in the dairy; milk contamination.

Conditions of Life.—The influence of temperature, light, food, oxygen, moisture, chemical preservatives, antiseptics and disinfectants; pasteurization and sterilization.

Uses of Bacteria.—Starters; their preparation and uses in butter-making and cheese-making; fermentation and its control.

Injurious Bacteria.—Their effects in producing coagulation, discoloration, taints; milk as a carrier of disease.

Dairy Book-keeping.

(*Half-course.*)

Methods of dealing with outward and inward correspondence. Explanation of the following terms:—Debtor, creditor, journalising, posting, cash, credit, interest, discount, balance sheet, and valuation.

The uses of waste book, day book, cash book, and ledger. Balancing and closing of these books.

Milk record book and wage book suitable for a small dairy farm.

III.—For Diploma Dairy Students.

Duration of Course—14 *weeks.*

Dairying.

The Course includes more complete instruction in the subjects of the Advanced Syllabus, and also in subjects of a more specialised kind, such as town, farm, and factory dairying ; homogenising ; condensing ; desiccation of milk ; milk foods ; butter blending ; comparison of butters from various countries ; factory cheese-making ; margarine and margarine cheese.

Practical Work includes that detailed in the Advanced Syllabus, and also practice in the making of several varieties of each class of cheese, viz. :—Hard, blue-veined, and soft.

Dairy Chemistry.

In this Course the nature, composition, and properties of the various substances met with in Dairying, and also with the changes which they undergo are dealt with. Students are also trained in the principles of laboratory methods in connection with Dairy work.

Bacteriology.

The subjects outlined in the Syllabus of Instruction for Advanced Students are dealt with, in this Course, in greater detail, and include some practical work in the preparation of culture media and pure cultures ; the estimation of bacteria in air, water, and milk ; the mounting and staining of bacteria and moulds.

Dairy Farming.

The Syllabus of Instruction for Advanced Students (page 19) is treated more fully, and includes the general management of a Dairy Farm.

Entry forms may be found on pages 66-68.

Fees for the Courses are given on page 13.

THE POULTRY SCHOOL.

COURSES OF INSTRUCTION IN POULTRY WORK.

1. PRELIMINARY POULTRY-KEEPING.

Duration of Course—9 weeks, for Dairy Students only.

Dairy Students attend three days per week for lectures and practical work.

2 JUNIOR POULTRY COURSE.

Duration of each Course—9 weeks. Courses for Female Students commence in January, March, and August; and for Male Students in October only, each year.

In this Course the various branches of Poultry-keeping are taught by means of Lectures and Practical Instruction.

3. ADVANCED POULTRY COURSE.

Duration of Course—14 weeks, commencing in May, for Female Students only, who have already been awarded a Junior Poultry Certificate.

The Lectures embrace more complete instruction in the subjects included in the Junior Course, and also in special subjects. Practical instruction is given in all its branches.

4. TEACHERS' CERTIFICATE COURSE.

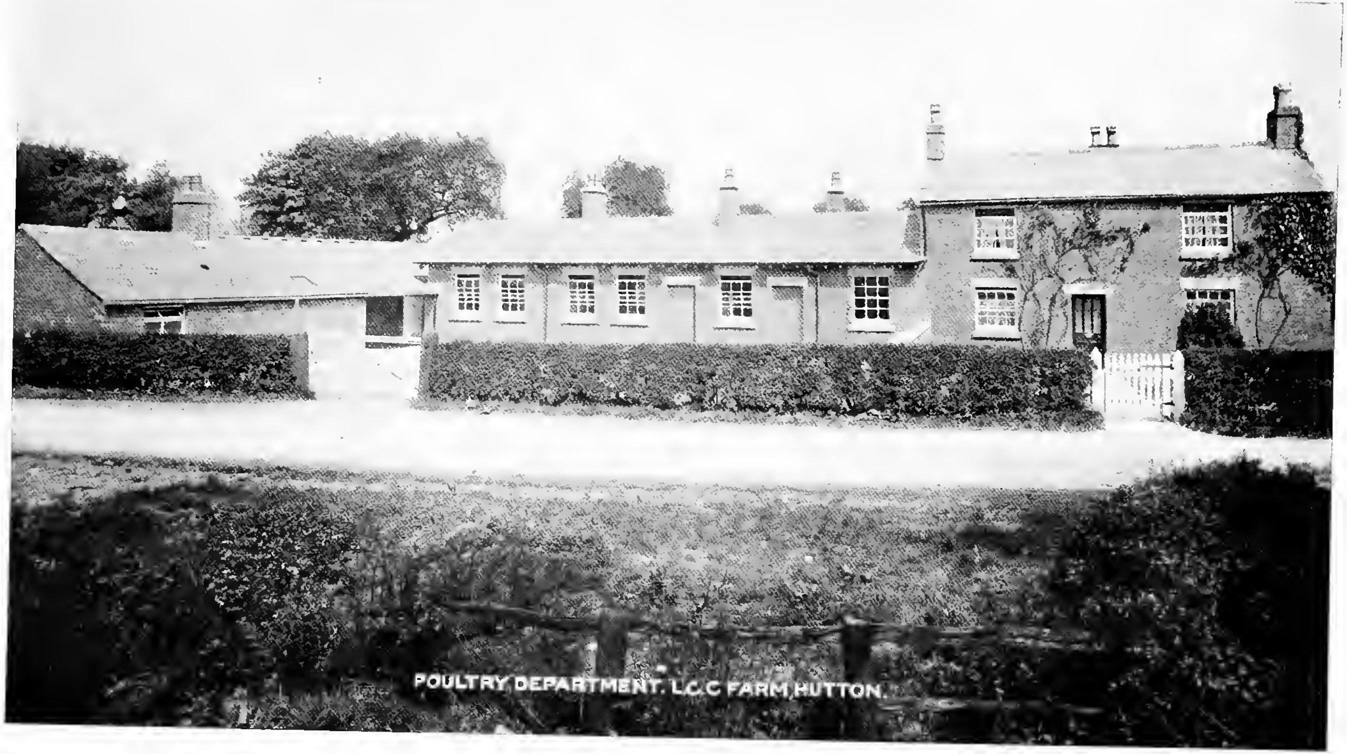
Duration of Course—14 weeks, commencing in May for Female Students only.

Open to those who have complied with the conditions given below.

POULTRY CERTIFICATES.

1.—The *Junior Certificate* is awarded to all Students who have satisfied the Committee in the Examination held at the end of each Junior Course.

2.—The *Advanced Certificate* is awarded to all Students who have already obtained the Junior Certificate, and who have satisfied the Committee in the Examination held at the end of each Advanced Course.



POULTRY DEPARTMENT. L.C.C FARM, HUTTON.

3.—The *Teachers' Certificate* is awarded to Students :—

(i.) Who have already received a training in the Principles of Agriculture.

(ii.) Who have gone through a training of at least two months at the Lancashire County Council Poultry School.

(iii.) Who can show that they have had at least 12 months' thorough practical experience in all branches of Poultry-keeping on some Poultry Farm other than the County Council Farm, Hutton.

(iv.) Who have passed successfully the Examination held at the close of the Poultry Course.

General Conditions governing the Award of Certificates.

(*a*)—No Candidate will be awarded a Certificate who does not pass in each of the ordinary subjects of the Examination held at the termination of the corresponding course of study.

(*b*)—No Candidate who has gained less than 50 per cent. of marks in either the theoretical or practical Examinations will be eligible for a Junior or Advanced Certificate.

(*c*)—No Candidate who has gained less than 70 per cent. of marks in either the theoretical or practical examinations will be awarded a Teacher's Certificate. The Certificate will be marked "with Distinction" in the case of those Students who obtain over 80 per cent. of the total maximum marks obtainable.

(*d*)—No Certificate will be granted to a Candidate who has failed to pass in one or more of the ordinary subjects of an Examination, until he or she passes in the whole of the subjects in some subsequent Examination.

(*e*) That the conduct of the Student has been satisfactory.

Entry forms may be found on pages 66—68.

Fees for the Courses are given on page 13.

SYLLABUSES OF CLASSES FOR SESSION 1912-13.

I.—Preliminary Poultry-Keeping.

(*For Dairy Students only*).

Branches of Poultry-keeping.—Poultry-keeping alone, or in connection with a dairy farm, house, or cottage.

Breeds.—Classification—laying, general purpose, table.

Breeding.—Selection of stock ; when and how to breed.

Incubation.—Management of the sitting hen ; natural rearing of chickens.

Foods and Feeding.—Suitable food for breeding stock, young chickens, laying hens, and fattening birds ; economy in feeding.

Houses and Housing.—Portable and fixed houses—construction and cost ; shelter sheds.

Diseases.—Prevention, causes, and symptoms of roup, gapes, &c.

Practical Work.—Plucking and trussing of fowls.

II.—Junior Poultry-Keeping.

Duration of Course—9 weeks.

Various Branches of Poultry-keeping.—Poultry-keeping alone, or in connection with a farm, house, or cottage.

Breeds.—Classification of fowls, turkeys, and ducks.

Selection.—Pure and cross breeding, for egg production and table purposes.

Incubation.—Natural and artificial, comparison of the two methods ; when and how to test for fertility.

Feeding.—Suitable diets for young chickens, laying hens, fattening fowls, turkeys, and ducks ; economy in the use of foods ; utilization of by-products from farm, house, and garden.

Rearing.—With hens and heated brooders.

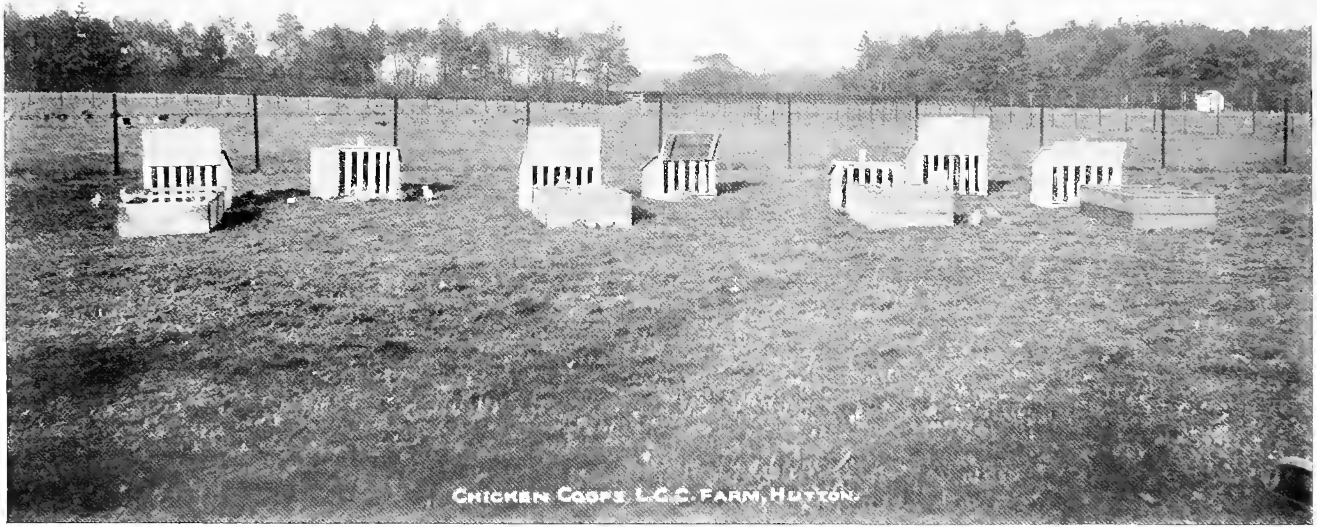
Housing.—Chief points to be observed in the construction of fixed and portable houses ; advantage of shelter sheds.

Table Poultry.—Fattening and marketing of fowls, turkeys, and ducks.

Disposal of Eggs.—Preserving and marketing.

Diseases.—Causes and symptons of roup, gapes, scaly-leg, and crop-bound ; prevention and remedy.

Practical Work.—All branches.



Chicken Coops, L.C.C. Farm, Hutton.

III.—Advanced Poultry Course.

Duration of Course—14 *weeks.*

The lectures embrace more complete instruction in the subjects of the Junior Course, and also lectures in the following subjects :—

Origin of poultry—early history ; results of domestication and distribution ; anatomy of the fowl ; digestive system of the fowl ; embryology of the chick ; artificial rearing of the chicken and duckling ; breeding and management of turkeys and geese ; diseases of respiratory organs, circulatory and digestive systems, limbs, comb, etc. ; utilization of poultry products, manure, feathers, etc. ; general management—how to purchase stock and appliances, necessary expenditure. Soils, suitable and unsuitable, for poultry-keeping.

IV.—Teachers' Certificate Course.

Duration of Course—14 *weeks.*

The work of this Course is similar to that of the Advanced Course, but a higher standard is necessary, and Candidates must show that they have ability for imparting knowledge to others.

B.—COUNTY COUNCIL AGRICULTURAL SCHOOL, HARRIS INSTITUTE, PRESTON.

Systematic instruction in the principles and practice of Agriculture, in Chemistry, Botany, Zoology, Geology, Veterinary Science, Book-keeping, Engineering, and Land Surveying, &c., will be given at the County Council Agricultural School, Harris Institute, Preston, during the Session commencing on Tuesday, the 24th September, 1912, and ending on the 4th April, 1913.

The object of this School is to prepare young men and women for the work of a farmer's life, by instructing them in the principles which underlie farming operations, and demonstrating—in the lecture room and on the farm—modern and scientific methods of Agriculture. The full course extends over four winter sessions, each comprising 26 weeks.

The Session will consist of Two Terms, viz. :—

First Term from Tuesday, 24th September, to Friday, 20th December, 1912, about 13 weeks.

Second Term from Tuesday, 7th January, to Friday, 4th April, 1913, about 13 weeks.

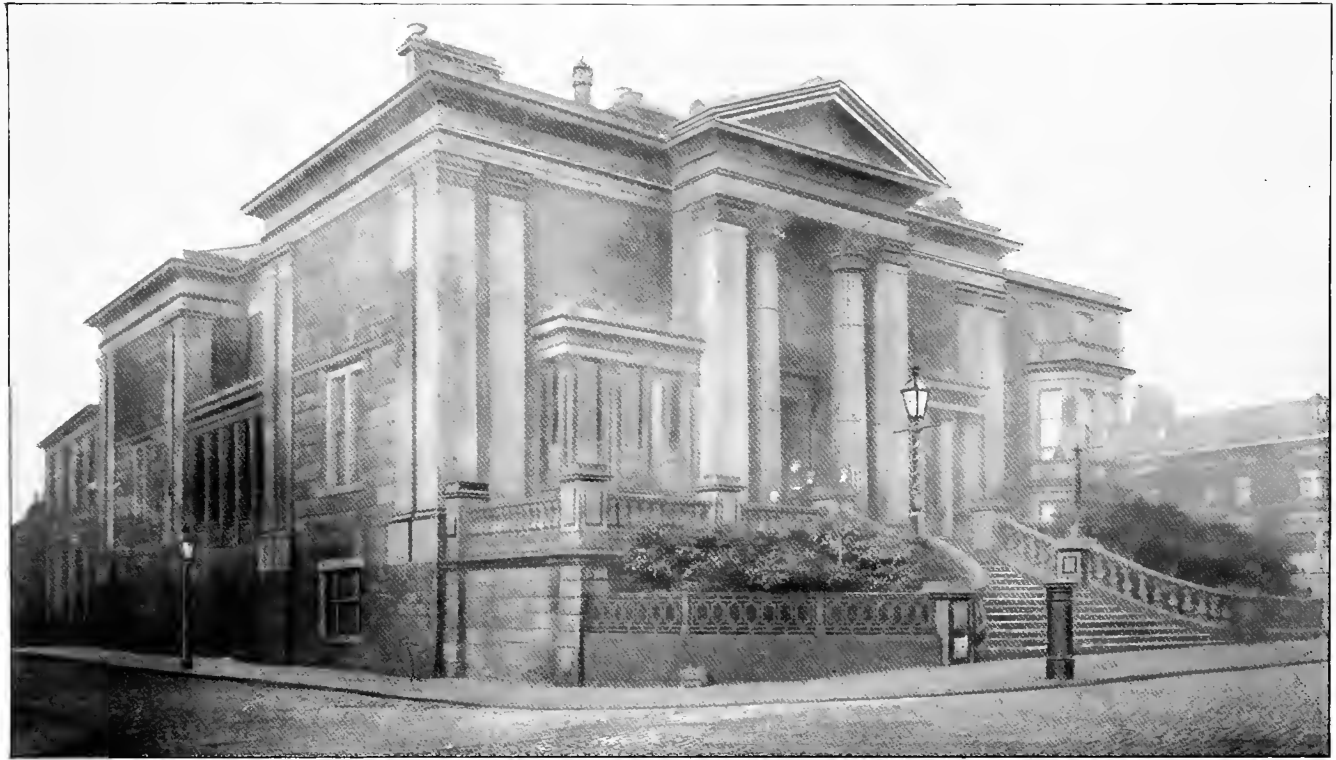
I.—DIPLOMA COURSE IN AGRICULTURE.

First Winter Session.

The first winter's work is of a preparatory character, leading up to the more specialised work of the following year. The work of the Course covers those subjects included in the Examination for the Junior Agricultural Exhibitions of the Lancashire Education Committee.

Second Winter Session.

The instruction given during the Student's second year consists in the amplification of the work of the first winter, while the subjects of Book-keeping, Mechanics, and Veterinary Science are introduced ; it affords suitable preparation for the Senior Agricultural Exhibition Examinations of the Lancashire Education Committee.



THE HARRIS INSTITUTE, PRESTON.

THIRD WINTER SESSION.

During their third winter's study the Students are given thorough instruction in Botany, Zoology, Veterinary Science, Engineering, and Land Surveying. These subjects being given an agricultural bias, provide a training which will be of considerable value to those who will subsequently enter on farming careers. The Students are enabled to take these subjects in the National Diploma Examination and to compete for the Junior Agricultural Scholarships awarded by the Lancashire Education Committee.

FOURTH WINTER SESSION.

This constitutes the last year of the Diploma Course. At this stage the subject of Agriculture receives special attention, particularly from the practical point of view; the stocking of farms, valuation, judging of stock, estimates, &c., being thoroughly dealt with; while Book-keeping and Agricultural Chemistry are also fully treated. These three are the remaining subjects for the National Diploma in Agriculture, the Lancashire Diploma in Agriculture, and are also the subjects of examination for the Senior Agricultural Scholarships awarded by the Lancashire Education Committee.

II.—SHORT COURSES IN AGRICULTURE.

This Course, which comprises the first and second Winter Sessions of the Diploma Course, is suitable for those who are not in a position to devote four winters to the study of Agriculture and the Allied Sciences, but who wish to gain a working acquaintance with the general principles underlying agricultural operations.

RULES AND REGULATIONS.

1.—Students are required to attend punctually and regularly the classes for which their names are entered, and are expected to satisfy the Lecturers with their diligence and progress in the prescribed class work.

2.—The Principal of the Harris Institute is responsible for the attendance and discipline of the Students, and leave of absence from any class must be obtained from him. In the case of absence without leave, a written explanation must be sent to him.

3.—All Students are required to take the Terminal Examinations in the classes which they attend.

4.—The Courses of study taken by Students holding Exhibitions or Scholarships must be approved by the Director of Education.

5.—Students are required to provide themselves with the Text Books used in the classes which they attend.

6.—Students who do not live with their parents or guardians are required to reside in approved apartments or lodgings, a list of which is kept at the Office of the Harris Institute. Students may, however, apply to the Principal for approval of any house at which they desire to stay. Removals cannot be made during a Session without reporting the matter to the Principal for his approval. At the end of each term, reports as to conduct, regular hours, &c., of the Students will be obtained from the housekeeper where the Student resides, such reports being submitted to the Agricultural Committee for their consideration.

7.—Students may be requested to withdraw from the School before the completion of the Session, if the reports of attendance, progress, or conduct are unsatisfactory.

CERTIFICATE IN AGRICULTURE.

A Certificate will be awarded by the Lancashire Education Committee to First, Second, Third, and Fourth Session's Students respectively attending the Agricultural School, Harris Institute, Preston on the following conditions :—

(*a*) That the Students have satisfied the Committee in all the subjects at the various terminal examinations of the Session for which the Certificate is granted, and have obtained at least 60 per cent. of the total maximum number of marks attainable at those examinations.

(*b*) That a satisfactory report has been received as to the progress, conduct, and homework of the Students during their attendance at the School.

(*c*) That satisfactory reports as to the home conduct of the Students have been received from the housekeepers in whose rooms they have resided.

(*d*) That a good report has been received for regular and punctual attendance at classes.

DIPLOMA IN AGRICULTURE.

A Diploma will be awarded by the Lancashire Education Committee to Students attending the Agricultural School, Harris Institute, Preston, on the following conditions :—

(*a*) That the Students have attended the School for at least three full Sessions, and have completed the work of the Fourth Session.

(*b*) That the Students have satisfied the Committee in all Subjects at the various terminal examinations throughout their course of study at the School, and have obtained at least 70 per cent. of the total maximum number of marks attainable at the examinations held in connection with the Fourth Session's Classes.

(*c*) That a satisfactory report has been received as to the progress, conduct, and homework of the Students during their attendance at the School.

(*d*) That satisfactory reports as to the home conduct of the Students have been received from the housekeepers in whose rooms they have resided.

(*e*) That a satisfactory report has been received for regular and punctual attendance at Classes.

(*f*) That the Students have *resided*, and have been engaged in practical work, on a farm, other than the Council Farm at Hutton, for a period of not less than twelve months previous to commencing the work of the Fourth Winter Session.

The Diploma will be marked " With Distinction " in the case of those Students who have gained over 80 per cent. of the total maximum number of marks obtainable at the Terminal Examinations of the Fourth Session.

AGRICULTURAL STUDENTSHIPS, AND CONDITIONS OF ENTRY TO THE AGRICULTURAL SCHOOL.

1.—The Agricultural Sub-Committee is prepared to consider applications for the above Studentships from those engaged, or likely to be engaged, in Agricultural pursuits.

2.—The Studentships will be tenable for one year, and may be renewed from year to year up to a period not exceeding four years.

3.—The Studentships will provide :—

(*a*)—*For County Students who, in the opinion of the Agricultural Committee, are the children of bona-fide farmers, farm labourers, or others closely connected with Agriculture* :—

Free tuition.

The expense, in excess of £1, incurred in travelling by a pupil residing two miles or more from the school.*

The Student must adopt the most economical method of travelling. Thus, wherever possible, a railway contract ticket (third class) should be obtained. In cases where railway contract tickets are obtained, a receipt for the amount paid for such ticket must be produced for audit purposes. In other cases, the number of journeys stated must be certified by the Principal of the school ;

or,

in cases where pupils reside so far from the school that they cannot travel to and from their homes each day, an allowance for maintenance in lieu of travelling expenses not to exceed seven shillings per week. *Entry Form will be found on page* 69.

(*b*)—*For other County Students* :—

Tuition, at a charge of £3 3s. per Session, and the same travelling or maintenance allowance, as specified above. *Entry Form will be found on page* 70.

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* The principal Railway Companies have agreed to issue Contract Tickets to the Students for the period exactly covering the Session, *i.e.*, from September 24th 1912, to April 4th, 1913, and Students claiming travelling allowance must produce a certificate from the Railway Company stating the actual amount paid for the ticket.

Note.—The allowances will be paid after the close of the Session in April, 1913, on the receipt of a claim, accompanied by a satisfactory report regarding attendance, progress and conduct submitted to and approved by the Agricultural Sub-Committee.

4.—*Fees for Non-County Students are as follows :—*

£10 10s. 0d. per Session.
£5 5s. 0d. per Term.

Fees for Non-County Students are payable to the Principal of the Harris Institute, from whom particulars regarding fees for single subjects may be obtained. *Entry Form will be found on page* 71.

NOTE.—All fees are payable in advance.

5.—Candidates for Studentships must be at least 15 years of age on the 1st day of August, 1912, and must be *residents* in the Administrative County of Lancaster, which includes all places within the area of Lancashire, *except* Stalybridge and Todmorden, and the County Boroughs of Barrow-in-Furness, Blackburn, Blackpool, Bolton, Bootle, Burnley, Bury, Liverpool, Manchester, Oldham, Preston, Rochdale, St. Helens, Salford, Southport, Stockport, Warrington, and Wigan.

6.—Candidates for Studentships will be required to reach such standard as may be determined by the Agricultural Sub-Committee in the Examination held for the award of (i.) County Junior Exhibitions restricted to children from Public Elementary Schools, *or* (ii) of Merit Certificates ; *or* as an alternative to produce evidence that they have reached the standard of attainment demanded in the case of the restricted Junior Exhibitions.

The subjects of the Examination will be substantially equivalent to Standards VI. and VII. of the Elementary Code. Further information on the subjects of the Examination will be found in the Conditions and Regulations respecting Exhibitions and Scholarships to be awarded in 1913.

Note.—A preliminary entrance examination is arranged each year (generally in September) for those who are desirous of obtaining a free studentship, but who have been unable to produce evidence of their attainments in accordance with paragraph 6 above.

All **Female** Students will be required, before admission to the Agricultural School, to pass the Advanced Dairy Examination, or the Advanced Poultry Examination, held at the County Council Farm.

7.—All **Male** Students will be required, *prior to admission to the Agricultural School,* to shew that they have *resided* and have been engaged in practical work on a farm for a period of not less than six months.

Exhibitions and **Scholarships** are offered to all County Students for competition at the close of each Session, particulars regarding which can be obtained from the Director of Education, County Offices, Preston.

The Committee reserve to themselves the right to modify the conditions under which Studentships, Exhibitions, Scholarships, Diplomas, Certificates, &c., are offered in this Scheme.

The Entry Forms may be found on pages 69, 70, *and* 71.

SYLLABUSES OF CLASSES FOR 1912-13.

(DIPLOMA COURSE.)

I.—For Students taking the First Winter Session.

Agriculture.

Soils : Introductory considerations involved ; origin ; soil and subsoil ; value of constituents — sand, clay, chalk, humus ; texture ; capacity for water ; surface tension and capillarity ; percolation and drainage ; movement of water—effects of drainage and tillage operations ; causes affecting temperature ; important chemical constituents—nitrogen, phosphoric acid, potash, lime ; dormant and available constituents ; living organisms—bacteria, nitrification and denitrification ; fertility and sterility, liming, marling.

Rotations of Crops : Principles ; different methods of cropping ; circumstances determining which crops should be grown—soil, climate, markets, labour, &c. ; intensive culture ; bare fallows.

Pastures and Meadows : Herbage—clovers, grasses, and miscellaneous plants ; brief description of best grasses and clovers &c. ; laying down of land to grass—seeding and general management.

Insects : Description of an insect ; metamorphoses—egg, larva, pupa, imago ; explanation of terms—grub, maggot, caterpillar ; mode of life of insects, useful and injurious forms ; description and life history of some common insects.

Farm Demonstrations : Special points of a practical kind, bearing on the above, are considered and explained ; grain-judging and stock-judging will constitute a part of the work.

Botany.

Anatomy.—The general facts relating to flowering plants so far as can be seen without a microscope ; the root, stem, leaf, and flower ; their relations to one another and comparison of their various parts.

Histology.—Structure of the vegetable cell, characters of cell-contents ; the minute parts of the plant generally, and their arrangement in stems, roots, leaves, and flowers.

Physiology.—Nutrition : foods used by plants ; their various sources, and the methods by which they are assimilated.

Respiration : The utilisation of oxygen and the evolution of carbon dioxide.

Photo-synthesis : The converse of respiration, and the production of sugar and starch in the green parts of plants.

Transpiration : Passage of water from roots to leaves, and thence to the atmosphere.

Movements and Protoplasm: Rotation and revolution of the living matter in cells.

Fertilization: Fusion of generating nuclei and the pro duction of seed.

Systematic Botany.—Outlines of classification; methods of comparing plants; characteristics of some of the more important natural orders of plants.

Practical Work.—Examination of typical plants and parts of plants, special attention being paid to those of agricultural interest; also occasional field demonstrations.

Geology.

General introduction to the various branches of the subject, in order to indicate their inter-relationships.

Objects of the science; its application to other studies, and to the industries of agriculture, engineering, mining, and metallurgy.

Crust of the earth.

General physical characters, such as colour, hardness, lustre, crystallographic form, &c., and the chemical composition of the commoner rock-forming and other minerals.

Rocks, and their classification into aqueous, igneous, and metamorphic; clays, limestones, sandstones, shales, &c., with their characters and modes of formation; mineral veins and lodes; changes to which rocks are subjected; stratification and upheaval; fissility; cleavage; jointing; folding; and faulting.

Action of the atmosphere, springs, streams, and ocean on rocks; and the general weathering of rocks and formation of soil.

Occasional field-excursions will be arranged.

Chemistry.

Chemical changes distinguished from temporary physical changes.

Indestructibility of matter.

Properties of gases; air; relation of air to flame and combustion generally; composition of the atmosphere.

Preparation and properties of oxygen and nitrogen; hydrogen; water.

Laws of chemical combination; law of definite proportions by weight; law of multiple proportions; law of volumes; equivalents; connection between equivalent and atomic weight.

Mixture and combination distinguished.

Chlorine and hydrogen chloride; atomic theory.

Carbon and its compounds with oxygen.

Sulphur and its compounds with oxygen and hydrogen.

Acids: general properties; characteristic properties of hydrochloric, sulphuric, and nitric acids.

Properties of a few common sulphates, chlorides, nitrates, and carbonates.

Nitrogen, and its compounds with oxygen and hydrogen, nitrous oxide, nitric oxide, ammonia.

General characters of the metals ; general preparations of salts.

Practical Work.—The effects of heat, water, and acids upon various substances ; if a gas is evolved, the identification of such gas ; recognition of materials which have been exhibited upon the lecture table, and the properties of those which have been demonstrated, *e.g.*, sulphur, iodine, charcoal, manganese dioxide, potassium chlorate, nitre, sal ammoniac, &c. ; quantitative experiments of a simple kind ; determination of equivalents ; percentage of carbon dioxide in a carbonate ; standard acid and alkali.

Cookery.

Lessons on the following principles, illustrated by suitable dishes :—Stewing, baking, boiling, frying, grilling, steaming, egg-cookery, batters, re-heating of cold meat, preservation of foods, invalid foods, principles of dietaries, vegetable foods, cheese-cookery, pastry, buying and choice of food, &c.

Lessons will include demonstrations and practical work.

Drawing.

Model Drawing.—The cube, square, prism, triangular prism, cylinder and cone in simple positions, both above and below the level of the eye ; drawing common objects similar in construction to the models named above, both from actual objects and from memory ; making perspective drawings of objects from plans and elevations.

Geometry—Plain and diagonal scales ; problems relating to areas ; plans and elevations of simple solids ; alteration of ground line.

English.

Writing from dictation of passages from newspapers.

Sentence forming and correction of common errors.

The elements of English Grammar, including easy parsing and analysis.

The writing of letters (social and business).

Essays on subjects of general interest, together with paraphrase of easy passages of verse and prose.

The recognition of simpler figures of speech.

Physics.

Measurement of lengths, areas, and volumes in English and metrical units. Use of simpler measuring instruments.

Balance and its uses.

Principle of Archimedes. Specific gravity and density.

Elementary examples of flotation.

Nicholson's Hydrometer.

Hydrometers of variable immersion.

Mathematics.

Arithmetic.—Principles of arithmetical operations applied to whole numbers and vulgar and decimal fractions ; the metric system ; approximations ; averages ; contracted multiplication and decimals ; use of logarithmic tables ; square root.

Algebra.—Addition, subtraction, multiplication, division ; numerical substitutions ; factors ; simple equations and problems producing them ; fractions ; graphs.

Geometry.—Angles and parallels ; triangles ; parallelograms ; problems ; loci.

Mensuration.

General measurements relating to lengths and areas—The foot, link, chain, acre, metre, and are.

Measurement of lengths and areas—Triangle, parallelograms irregular quadrilateral, circle.

General measurements relating to solids—The foot, pound, gallon, gramme.

Measurement of solids—Parallelopiped, prism, cylinder, pyramid, cone, prismoid.

Woodwork.

The lessons in woodwork will be associated with drawing.

The Course will include descriptions of the more common kinds of woods, and the purposes for which they are best adapted; instruction in the use and care of tools ; graduated exercises in bench work dealing with the principles of construction of and repairs to farm appliances.

EDUCATIONAL PLOTS, L.C.C. FARM, HUTTON.

II.—For Students taking the Second Winter Session.

Agriculture.

Draining.—Indications that land requires draining; methods of draining; advantages of draining.

Irrigation.—Methods of irrigation; advantages and disadvantages; sewage irrigation.

Warping.—Description of the process; cropping of warp land.

Manuring.—General principles: Farmyard manure, its production, management, storage, composition, properties, and application; town stable manure and its purchase; green manuring, its applicability to farm practice; artificial manures, their sources, composition, properties, and application; the unit system of valuation; valuation of compound manures.

Crops and Catch-crops.—Ordinary crops of the rotation, their history and geographical distribution; preparation of the land; manuring; sowing; summer treatment; harvesting and utilisation; haymaking and ensilage; cost of production of typical root and corn crops, and valuation of the produce.

Special crops of the rotation and brief description of their history, geographical distribution, cultivation, and uses.

Catchcrops: Their applicability to farm practice.

Insect and fungoid attacks.

Weeds.—Principal weeds of the farm, their identification and suppression.

Seeds.—Identification of the seeds of crops dealt with during the course.

Farm Stock.—Breeds common in Lancashire—brief description of points, selection.

Breeding.—Principles involved; rearing; general management.

Feeding.—Rules to be observed; characteristics of the various foods; rations for different classes of stock; considerations to be borne in mind when purchasing food; home-grown and purchased foods; practical details.

Farm Demonstrations.—The more practical points arising out of the above are dealt with on the farm.

Book-keeping.

The making out of ordinary business forms, order notes, invoices, credit notes, statements, cheques, and receipts; the use of the subsidiary office books, petty cash, wages, and stock books.

The keeping of purchases, sales, and return day books, cash book (with three columns for cash, bank, and discount), waste book, and journal.

The ledger and the posting of simple transactions to personal and impersonal accounts.

The preparation of a trial balance, an easy profit and loss account, and a balance sheet.

The meaning of simple business terms and abbreviations.

Botany.

The Course will be mainly occupied with a fuller treatment of the subjects enumerated in the syllabus for the First Winter Session, with the addition of the following:—

Anatomy.—Modifications undergone by different kinds of stems, roots, leaves, and flowers, enabling them to function as storage, protective, climbing, or attracting organs; cladodes, bracts, prickles, thorns, spines, and flattened stems.

Kinds of fruits—true fruits and pseudocarps; inflorescences; various kinds of seeds; growing points, and origin of roots and shoots; stomata and lenticels.

Physiology.—Twining and climbing of plants with reference to irritability and the purposes served by them; ascent of sap; the absorption of water; movements of water in the plant; turgescence, and the mechanical action of the guard-cells of stomata; plants and their environment; effects produced by light, heat, soil, air, and moisture; development of plants; reproduction by spores, seeds, and cuttings; the germinating power of seeds; what germination is; self and cross pollination and fertilization; fall of the leaf.

Classification.—Crops and weeds; ephemerals, annuals, biennials, and perennials; herbaceous and woody herbs, shrubs, and trees; scientific classification of plants into natural orders. More particular attention will be given to the common grasses and such plants as constitute our chief farm crops and weeds.

Practical Work.—Microscopical examination of prepared sections of all parts of flowering plants; examination of hard specimens for winter buds, lenticels, phyllotaxis, inflorescence, &c.; examination of the common kinds of grasses; classification of plants. Occasional field or open-air demonstrations will be given.

Chemistry.

Water—natural waters—their impurities and purification.

Acids—bases—salts.

Carbon—its compounds with oxygen, sulphur and nitrogen.

Nitrogen—nitric acid—nitrates—and nitrites.

Sulphur—sulphides—sulphuric and sulphurous acids—sulphates.

Chlorine—bromine—iodine. Chlorides—chlorates—chloride of lime, bleaching.

Phosphorus—phosphates—superphosphate.

Silica—silicates—arsenic.

Metals—ores—general metallurgic processes.

Alkalies—chief alkaline salts—alkalimetry—acidimetry.

Lime—the chief lime compounds.

Magnesium, zinc, iron, lead, copper, mercury, silver, and their technically important salts.

Organic Chemistry.—Distillation of coal and wood—nature of chief products.

Hydrocarbons—paraffins—olefines and their chief oxidation products—alcohols, aldehydes, acids.

Fermentations—alcoholic, acetic, lactic, butyric.

Carbohydrates—sugars, starch, cellulose, dextrine, gums.

Fats—glycerol—saponification. Benzine—phenol.

Tartaric, citric and other common vegetable acids.

Amines and amides—urea. Proteids, peptones, gelatine, &c.

Practical Work.—Qualitative analysis; volumetric analysis—use of standard acid and alkali, potassium permanganate, and silver nitrate; quantitative experiments.

Geology.

Principles of palæontology, and the identification of strata by means of the fossils which they contain; changes in climate, as shown by changes in the life-forms.

Geological maps and sections; movements in the crust of the earth; faults, overlaps, and unconformability of rock-layers; general distribution of the various formations or deposits in the British Isles.

Economic products of the various formations, such as coal, slates, limestones, salts, ores, building stones, and mineral manures.

General characters and composition of the following groups of minerals:—Quartz, opal, and chalcedony; felspars; micas; amphiboles and pyroxenes; calcium and magnesium carbonates; oxides and sulphides of iron.

Influence of the geological structure of a country on the configuration of the land and the composition of the soil; relation of strata to water supply and drainage; origin of springs.

The various mineral manures, their sources, characters, and modes of occurrence.

Different kinds of building stones and road materials; distribution of the various economic substances.

The Student will have access to a collection of minerals, rock-specimens, and many of the more characteristic fossils; to maps illustrating more particularly the geology of Lancashire, and general maps for the British Islands. Demonstrations in the field will be given occasionally.

Mathematics.

Arithmetic.—Contracted methods; use of logarithmic tables; percentages; interest; profit and loss; stocks and shares; ratio and proportion.

Algebra.—Factors; greatest common measure and least common multiple; fractional expressions; square root; quadratic equations and problems; graphs.

Geometry.—Areas; the right angled triangle; the circle; chords, tangents, angles, the trigonometrical functions of the common angles.

Physics and Mechanics.

Measurement.—Length, area, British and metric systems, length of curved lines, verniers.

Volume.—Determination by direct measurement and displacement, vessels used, volume of irregular solids.

Mass.—Relation between mass and weight; units of mass; gravitation; spring balance; ordinary balance; areas and volumes by weighing.

Relative Densities.—Relation between volume density, and mass. Principle of Archimedes; simple methods of determining specific gravity and density; hydrometer. Hare's apparatus.

Hydrostatics.—Fluid pressure, head of water, syphons, pressure of gases, atmospheric pressure, barometer, pumps, Boyle's Law.

Statics.—Lever, moments, steelyard, principle of common balance, parallel forces, equilibrium of three parallel forces, triangle and parallelogram of forces, centre of gravity in simple cases, pulleys, inclined plane, mechanical advantage, principle of work.

Heat.—Effects of heat and cold on bodies, forms of matter, chief properties of matter, expansion of solids, liquids, and gases; melting and boiling points, thermometers, heat and temperature, condensation, transmission of heat by conduction and convection.

Veterinary Science.

Structure of the Body —Situation of the various organs; differences between the horse and other farm animals.

Conditions on which Health depends —Air, food, water, general sanitation.

Respiratory System —Lungs; circulation of the blood.

Digestive System of the Horse —Alimentary canal; process of digestion.

Digestive System of the Cow —Comparison with that of the horse.

Foot of the Horse —Structure; principles of shoeing.

Dentition —How to determine the age of the horse, cow, and sheep by their teeth.

First Aid to Injured Animals.—Treatment of wounds, bruises, and sprains, bleeding, &c.

Demonstrations —Proper methods of handling and approaching animals; administration of medicines; making proper beds for sick animals; application of bandages.

III.—For Students taking the Third Winter Session.

Agricultural Botany.

Morphology —The structure of plants ; the principles of classification ; the natural orders (phanerogams and cryptogams) dealing specially with those of importance to the agriculturist.

Physiology —The life of the plant ; organs and their functions—nutritive and reproductive.

Plant Breeding—Mendel's Law, its relation to disease, improvement in farm plants, association of unit characters, sports, fixing of types, &c.

Pathology —Diseases of plants, and their causes ; parasites—phanerogams, fungi, bacteria ; prevention and cure.

Cultivation —Conditions in plant life favourable to (*a*) the improvements of cultivated plants, and (*b*) the destruction of weeds ; improvement of plants by selection ; pastures ; pruning.

Practical Work —Preparation and examination of sections of the various parts of plants ; examination of seeds of crops, weeds, dry and growing specimens of plants ; preparations of common fungoid diseases.

Agricultural Zoology.

The part played by common animals in helping or hindering agricultural operations, as illustrated by moles and voles, insectivorous and other birds, snails and slugs, useful and injurious insects, arachnids and myriapods, earthworms, &c.

General Structure of Insects, especially the external characters.

Life-history of Insects.—Various forms of larvæ ; economic importance of different stages.

Classification of Insects.—The general characters of the following natural orders—coleoptera, lepidoptera, hymenoptera, diptera, hemiptera, orthoptera, neuroptera.

Acarina injurious to food crops and live stock.

Parasitic Worms.—Flukes, tapeworms, and threadworms.

Preventive and Remedial measures in regard to insects, acarines, and worm parasites, *e.g.*, farm practice in relation to the discouragement of insect attack ; encouragement of insect-eating birds and animals ; artificial remedies ; insecticides ; treatment for parasites.

Practical Work.—Typical worms, insects—useful and injurious—acarines, slugs, birds, &c.

Veterinary Science.

Lectures.—Anatomy and physiology, including the comparative anatomy of the bones of the animals of the farm, and the structure and functions of the different organs and tissues of the horse, ox, sheep, and pig.

The digestive processes and principles of nutrition in the above animals.

A general knowledge of the blood and its circulation, and the processes of respiration, secretion, and excretion.

The physiology of reproduction, and its bearings on healthy breeding.

The period of gestation in the mare, cow, ewe, and sow, and the special management of these animals prior to, at the time of, and after, parturition.

The management of farm stock in health and disease.

Demonstrations.—During the session students will visit the abattoir and farms for special instruction.

Engineering.

Steam Engine.—General construction of a simple steam engine; details of parts; slide valve.

Nature of heat; temperature; specific heat. Boyle's Law. Properties of steam; total and latent heats of steam. Cornish boiler setting and mountings. Lancashire boiler setting and mountings; condensers; pumps; uses of flywheels and governors; compound engines; superheaters; determination of indicated and brake horse-power; indicators; mean effective pressures; hypothetical indicator diagram for a steam engine.

Composition of fuels; air required for combustion; gas and oil engines. Otto cycle of operations; suction gas producers.

Distribution of the energy of fuels; fuel consumption; steam consumption.

Pulley blocks; differential pulley blocks; crabs; transmission of power; belt gearing; strength of belts; horse-power transmitted wheel gearing; power derived from water-falls; water-wheels; turbines.

Farm Implements and Appliances.—Ploughs, construction and adjustment; cultivators; harrows; land rollers; hoes; corn-drills; feed-mechanism and adjustment; turnip drills; mowing machines; horse-rakes; threshing machines; chaff cutters, construction, safety appliance, variation of length of chaff; root cutters and pulpers. Cream separators; churns; presses; vats.

Technical Electricity.—Magnets; fundamental ideas of electric current and E.M.F. Ohm's Law; resistance; simple theory of dynamo and motor; losses in electric machinery; uses of fuses, switches, and cut-outs; efficiency and horse-power of motors; faults.

Building Construction.

Properties, qualities, supply, price, &c., of the commoner materials used in constructing farm buildings.

Drawing exercises ; plans, elevations, and sections.

Construction of farm buildings, foundations, walls, roofs, &c.

Ventilation, lighting, and drainage.

Mensuration and Land Surveying.

Ordinary rules of superficial and solid mensuration ; volume of a prismoid ; applications to practical questions ; estimation of weights of bodies whose dimensions and specific gravity are known.

Land surveying by chain ; plotting from field book, and determination of areas surveyed ; the simpler " field problems."

The use and adjustment of instruments employed in surveying and levelling.

Levelling and plotting from field book.

A sufficient knowledge of trigonometrical surveying for the determination of heights and distances by theodolite ; as essential to this, solution of plane triangles by the aid of logarithmic tables.

A knowledge of the various classes of maps published by the Ordnance Survey Department, and their scales.

IV.—For Students taking the Fourth Winter Session.

Agriculture.

British Farming.—History of British agriculture. Agricultural statistics, numbers of live stock, areas in Great Britain under the principal crops; relation between supply and demand.

Climate.—The effect of climate on farming practice; rainfall, temperature, prevailing winds, weather forecasts.

Soils.—Influence of geological formations upon systems of farming. Classification of soils, character and composition, suitability for cultivation; reclamation of land, draining, irrigation, warping; application of lime, marl, chalk; management of soils, bare fallows.

Manures.—Farmyard manure, liquid manure, sewage; artificial manures; green manuring; field trials with manures; unexhausted value of manures and foods.

Rotations of crops.—Types of rotations, advantages; effects of soil, climate, and local conditions; catch-cropping.

Crops and Catch-crops.—Ordinary and special farm crops, adaptation to different soils and climates, varieties, selection of seed, sowing, and general management; harvesting and storing; cost of production; field trials; improvement of crops by selection and hybridising; resistance to disease; weeds, fungoid and insect pests.

Foods.—Home-grown and purchased, relative values; rations for different kinds and ages of stock.

Live stock.—British breeds of sheep, horses, pigs, and cattle; origin, characteristics and comparative merits, suitability for different localities and classes of farming; breeding, rearing, general management; cost of producing beef, mutton, pork, and milk; cost of feeding farm horses.

Renting a farm.—Indications of condition, productive power, and stock-carrying capacity; leases, conditions of occupancy.

Farming capital.—Types of farming; calculations of the stocking and working of stock, arable, and dairy farms; labour, farm valuations, rent and taxes.

Farm Class.

(*First Term*).

Practical work.—Butter-making, cheese-making, and milk sterilization; utilization of by-products; milk-testing by Gerber method.

Appliances.—Separators, churns, vats, presses, milking machines, &c.

(*Second Term*).

The Farm Bailiff will give practical instruction in stock judging: store, fat and milk cows; buying and selling of stock; live and dead weights, &c.

Live stock will also be studied at the Preston Auction Mart, and occasional visits will be paid during the Session to farms having features of special interest.

Several visits will also be paid to the Poultry Runs and Horticultural Station, where practical instruction will be given by the respective Experts in charge.

Bacteriology.

(*Before Christmas*).

Bacteria.—Their nature, forms, conditions of life ; artificial cultivation ; pure culture ; mounting and staining.

Bacteria in Air and Water.— Variation in numbers ; the contamination of water ; water as a carrier of disease ; estimation of bacteria in air and water.

Parasitic Bacteria.—Relation of bacteria to disease ; anthrax ; tuberculosis ; vaccination ; resistance against bacteria.

Bacteria in Dairy Products.—Useful and injurious bacteria found in milk, butter, and cheese ; fermentation and its control ; Pasteurization and sterilization of milk.

Dairy Farming.

(*After Christmas*).

Dairy Cattle—Characteristics, distribution, and suitability for various systems of dairy farming. Points of a good dairy cow.

Milk.—Milking, hand and machine ; cooling ; milk tests and records ; sale of milk, regulations, and contracts.

Butter.—Methods of cream raising ; ripening ; outline of general method of manufacture ; defects in butter and their prevention ; sale of butter regulations.

Cheese.—Classification and characteristics of cheese ; principles of cheese-making—hard, soft, and blue-veined.

Dairy Utensils.—The refrigerator, cooler, separator, and general dairy utensils.

Agricultural Book-keeping.

Principles of book-keeping ; single and double entry ; opening books, description of subsidiary books, with examples of entries therein ; the ledger ; posting ; preparation of trial balance ; valuation of stocks and effects ; closing and proving the books, preparation of profit and loss account and balance sheet ; ruling off accounts.

Application of special methods to farms of varying requirements ; apportionments of rents, &c.; bad debts ; banking ; bills of exchange (inland) ; capital accounts ; consignments ; depreciation ; discount ; expenditure—capital and revenue ; goodwill ; house expenses ; improvements ; income tax ; insurance ; interest ; leases ; partnership accounts ; petty cash ; repairs and renewals ; withdrawals.

Agricultural Chemistry.

The Atmosphere.—Its composition and relations to plant and animal life.

Water.—Rain water; soil water and drainage; drinking water; sewage and irrigation.

Soils.—Their origin, formation, and classification; sampling; analysis; composition; chemical and physical properties; the water and air of the soil; biological changes; relation to plant growth; fertility; causes of infertility; improvement of soils.

Manures.—Theories of manuring; classification; origin, nature and characteristics; manufacture; composition, analysis, adulteration and valuation; farmyard and other natural manures; green-manuring; liming, marling, claying; artificial manures, their origin and manufacture; Fertilizers and Feeding Stuffs Act; sampling.

Poisons, Antiseptics, and Preservatives.—General chemical composition and character of insecticides, fungicides, antiseptics, and preservatives used on the farm.

Plants and Crops.—Constituents of plants; assimilation and nutrition of plants; sources of the nitrogen and other constituents of plants; germination; action of enzymes; composition and manurial requirements of farm crops; food products derived from crops; manuring experiments.

Animals.—Composition of animal body; animal nutrition; digestion; assimilation, metabolism, respiration, and excretion.

Foods and Feeding.—Constituents of foods; origin, nature, and composition of chief feeding stuffs, sampling, analysis, and adulteration of foods; nutritive value and digestibility of food; functions of chief food constituents; energy values; relation of foods to the production of work, meat, milk, and manure; manurial residues of foods.

Dairy Chemistry.—The composition of milk, cream, butter, cheese, &c.; conditions which influence the composition of milk and milk products; action of ferments and enzymes on milk and milk products; milk testing; analysis and adulteration of dairy products.

Practical Work.—Gravimetric and volumetric analysis; analysis of ground limestone, superphosphate, basic slag, sulphate of ammonia, and muriate of potash; determination of the "hardness" of water; analysis of linseed cake or a compound cake; determination of the amount of sugar in roots, *e.g.*, mangels. Analysis of milk and the detection of preservatives; how to differentiate between genuine butter and margarine; partial analysis of soils.

General Chemistry.

This will consist largely in a revision of the work done in previous years.

TIME TABLE OF AGRICULTURAL CLASSES.

Diploma Course.

FIRST WINTER SESSION.

Hour.	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*
a.m. a.m. 9-30 to 10-30	Botany	Agriculture	Agriculture	Agriculture	Botany
a.m. a.m. 10-30 to 11-30	Tutorial Chemistry	Mensuration	Woodwork (10-30 to 12-30) or Cookery (10-30 to 1-0)	Geology	Chemistry
a.m. p.m. 11-30 to 12-30	Mathematics	Chemistry		Mensuration	Mathematics
p.m. p.m. 2-0 to 4-0	Drawing	English (2 to 3) Mathematics (3 to 4)	Holiday	*Farm Demonstration	Physics (3 to 4) English (2 to 3)

* In the event of the weather being unfavourable a lecture of an hour's duration will be given in the Class-room

SECOND WINTER SESSION.

Hour.	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*
a.m. a.m. 9-30 to 10-30	Agriculture	Geology.	Agriculture	Geology	Mathematics
a.m. a.m. 10-30 to 11-30	Mathematics	Botany	Veterinary Science	Practical Chemistry	Physics and Mechanics (10-45 to 12-15)
a.m. p.m. 11-30 to 12-30	Chemistry	Agriculture	Chemistry		
p.m. p.m. 2-0 to 4-0	Physics and Mechanics	*Farm Demonstration	Holiday	Botany	Book-keeping

* In the event of the weather being unfavourable a lecture of an hour's duration will be given in the Class-room.

THIRD WINTER SESSION.

Hours.	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*
a.m. a.m. 9-30 to 10-30	Veterinary Science	Engineering (9-15 to 10-15)	Veterinary Science	Engineering (9-15 to 10-15)	Veterinary Science
a.m. a.m. 10-30 to 11-30	Zoology	Zoology	Practical Botany	Zoology	Practical Zoology
a.m. p.m. 11-30 to 12-30	Trigonometry	Botany		Botany	
p.m. p.m. 2-0 to 4-0	Building Construction	Mensuration and Land Surveying	Holiday	Mensuration and Land Surveying	**1st Term** Electrical Engineering (2-0 to 3-0) **2nd Term** *Field Work (2-0 to 4-0)

* Occasional Excursions and Demonstrations will be arranged.

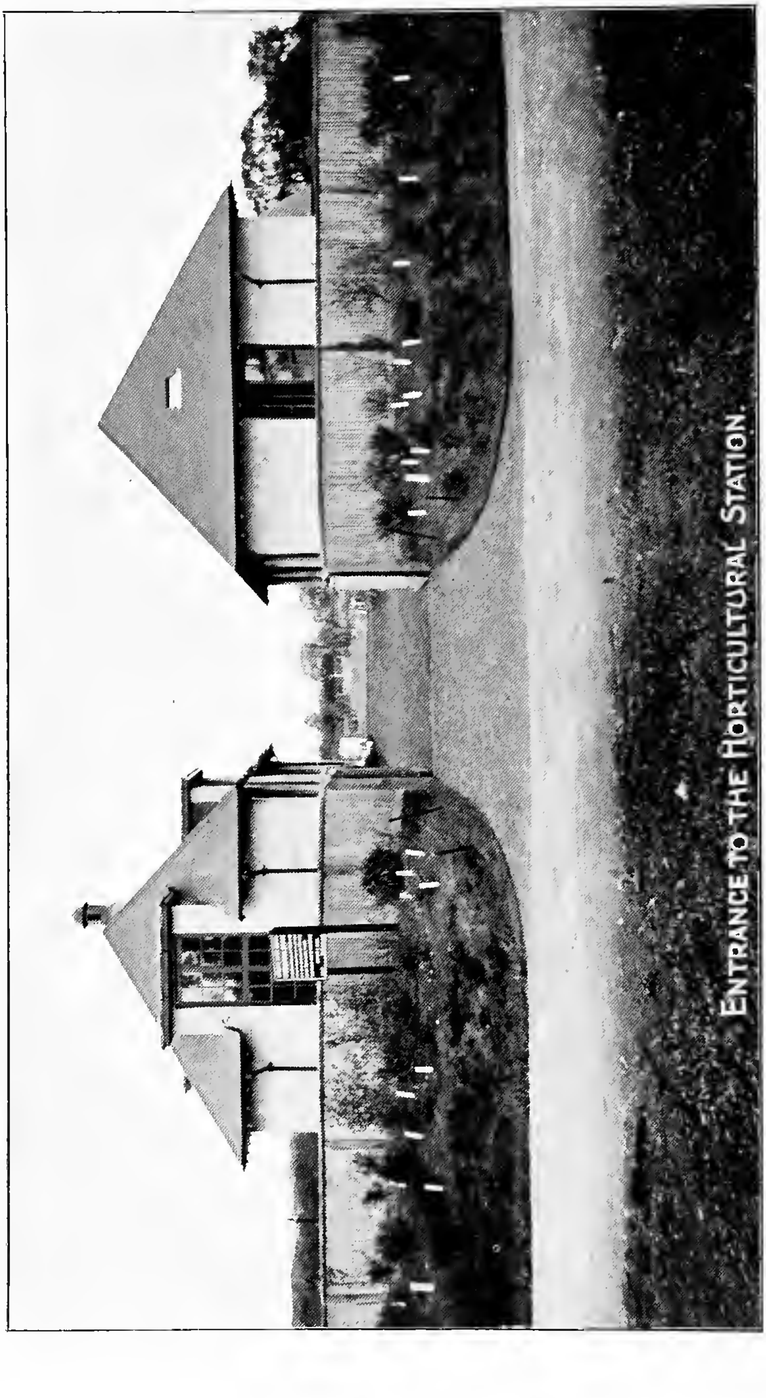
FOURTH WINTER SESSION.

Hour.	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*
a.m. a.m. 9-30 to 10-30	Agricultural Chemistry	General Chemistry	**1st Term** Farm Class (8-0 to 1-15) **2nd Term** Farm Class (9-0 to 10-0) Agriculture (11-0 to 12-0)	Agriculture	Private Study
a.m. a.m. 10-30 to 11-30	Agriculture	Agricultural Chemistry		Book-keeping	Agriculture
a.m. p.m. 11-30 to 12-30	Bacteriology and Dairying.	Agriculture			Agricultural Chemistry
p.m. p.m. 2-0 to 4-0	*Farm Demonstration	Agricultural Chemistry	Holiday	Agricultural Chemistry	Book-keeping

* Occasional Excursions and Demonstrations will be arranged.

Short Course in Agriculture.

Students taking this Course will attend the Lectures shown in the time tables for the First and Second Winter Sessions of the Diploma Course.



ENTRANCE TO THE HORTICULTURAL STATION.

DISTINCTIONS GAINED BY PAST STUDENTS OF THE LANCASHIRE COUNTY COUNCIL AGRICULTURAL SCHOOL, HARRIS INSTITUTE, PRESTON.

DEGREES.

B.Sc., Durham.—Lawrence Abram.

B.Sc., Edinburgh.—Wm. G. Mason ; J. O. Peet ; J. H. Eastham ; Samuel Simpson ; William T. Stockley ; Samuel Alker ; John Fisher ; Ernest Harrison ; William Thompson.

B.Sc., Glasgow.—James Bradshaw ; Edward Porter ; John Porter.

B.Sc., Leeds.—Wm. B. Thompson.

Ph.D., Halle, Germany.—Thomas Milburn ; Daniel L. Freeman.

Ph.D., Gottingen, Germany.—H. B. Hutchinson.

DIPLOMAS.

National Diploma in Agriculture :—

1900.—Samuel Simpson.

1902.—Jas. Bradshaw ; John Forrest ; Thos. Milburn ; John Percival ; Edward Porter ; John E. Rigg.

1903.—Samuel Alker ; John Bateson ; H. B. Hutchinson ; John Porter ; W. T. Stockley ; Jas. W. Thompson ; William B. Thompson (Gold Medal).

1904.—John M. Lonsdale ; Thomas Wibberley.

1905.—Alfred Eastham ; George Fisher ; Kate M. Nickson ; Robert Richardson ; John Robinson.

1906.—Annie G. Anyan ; George R. Bland ; Jas. R. Bond (with Honours) ; John Fisher (with Honours) ; Ernest Harrison (with Honours and Gold Medal) ; Fred. J. Podmore ; Thomas Rimmer (with Honours) ; R. W. Staniforth; William Sugden ; John Wilson.

1907.—Daniel L. Freeman ; Alfred L. Gibson ; Alfred Kilroe ; Arthur S. Llewellyn ; Esther L. Robinson ; Charles Saunders ; William R. Stoker ; William Thompson.

1908.—Samuel W. Deakin ; Norman B. Hyde ; Francis Metcalf ; Noel C. Viehoff.

1909.—Ammye S. Brentnall ; Claud Curwen ; Cuthbert Harrison ; Roger P. Holmes ; Edmund Ingham ; Allan S. Mc.William ; John Rimmer.

1910.—Fred. Bancroft ; Arthur O. Blackhurst ; James R. Holmes ; Thomas D. Marsh ; William Newton ; Yu-shee Kwok Sing ; Dorothy Thompson.

1911.—Austin Eastwood ; Robert Hall ; Robert Park ; Alfred E. Roberts ; John B. Thompson ; Herbert Wignall ; Wm. A. Yates.

1912.—Harold Bradshaw ; Edward Percival (with Honours).

National Diploma in Dairying :—

1896.—Sarah A. Birch ; Thomas Harrison ; John O. Peet.

1897.—William Southworth.

1898.—Lawrence Abram ; Eliza J. Freeman.

1899.—Maud P. Ashby ; Annie D. Mc.Kerrow ; George B. Nickson ; Dora Orr.

1900.—John Percival ; Chas. D. Stewart.

1901.—Beatrice M. Macara.

1902.—John Bateson ; H. B. Hutchinson ; Thomas Milburn ; John E. Rigg.

1903.—Samuel Alker ; Fred W. Allen ; George Fisher ; Jean M. Mason ; William T. Stockley ; William B. Thompson.

1904.—Daniel L. Freeman ; Annie Myerscough ; Kate M. Nickson ; Felicia U. Parkinson ; John Porter ; Thomas Wibberley.

1905.—Annie G. Anyan ; John Robinson ; Charles Saunders ; Joseph Simpson ; John Wilson.

1906.—George R. Bland ; John M. Lonsdale ; Robert W. Staniforth ; William Sugden.

1907.—Arthur S. Llewellyn ; William Thompson.

1908.—Alfred L. Gibson ; Margaret Howard ; Norman B. Hyde ; Dorothy Thompson ; Madeline Mason ; Allan S. Mc.William.

1909.—Leonard C. Bulmer ; Esther A. Grimshaw ; William Newton ; Esther L. Robinson.

1910.—Herbert Wignall.

1911.—Grace Lewis; W. A. Yates ; Robert Hall ; A. E. Roberts.

Diploma of the British Dairy Farmers' Association :—

1896.—John Camplin ; Annie Fairburn ; Thomas Hacking ; Thomas Harrison ; John O. Peet ; William Southworth.

1898.—Lawrence Abram ; Colin D. Cooke ; Eliza J. Freeman ; Samuel Simpson.

1911.—A. E. Roberts.

Honours Examination in Agriculture, Board of Education :—

1897.—John B. Ashbrook ; William Southworth.

1899.—John E. Rigg.

1900.—John Bateson ; William N. Rowlandson ; William B. Thompson.

1902.—Thomas Milburn ; Edward Porter.

1904.—John M. Lonsdale.

1905.—Alfred Eastham.

1909.—Ernest Harrison ; William Thompson.

LANCASHIRE AGRICULTURAL DIPLOMA.

This Diploma was established in 1906, and the first awards were made on the results of the Examinations held in April, 1906.

Awards.

1906.—James R. Bond ; John Fisher ; Ernest Harrison, " with Distinction " ; Thomas Rimmer.

1907.—Daniel L. Freeman ; Esther L. Robinson ; Charles Saunders ; William R. Stoker ; William Thompson, " with Distinction."

1909.—Cuthbert Harrison ; Roger P. Holmes ; A. S. Mc. William, " with Distinction " ; T. D. Marsh.

1910.—Fred. Bancroft ; Robert Park ; William A. Yates.

1911.—George H. Crabtree ; Robert Hall.

1912.— Harold Bradshaw, " with Distinction " ; Edwd. Percival.

LANCASHIRE DAIRY DIPLOMA.

This Diploma was established in 1905, and the first awards were made on the results of the Examinations of the Advanced Dairy Students held in September, 1905.

Awards.

1905.—Annie G. Anyan, " with Distinction " ; John Fisher ; Ernest Harrison, " with Distinction " ; Grace Inions ; Alfred Kilroe ; Janie Lloyd, " with Distinction " ; Frederick J. Podmore ; John Robinson ; Charles Saunders ; Alfred Simpson ; William Sugden.

1907.—Alice M. Ashley.

1908.—Margaret Howard, " with Distinction " ; Norman B. Hyde, " with Distinction " ; Dorothy Thompson," with Distinction."

1909.—Dorothea N. Faraday, " with Distinction " ; Esther L. Robinson, " with Distinction " ; Esther A. Grimshaw ; Margaret Vaughan.

1911.—Catherine Oswald ; Grace Lewis.

LANCASHIRE POULTRY TEACHERS' CERTIFICATE.

1902.—Edward Hatfield ; Frederick M. Kay.

1903.—S. Blanche J. Forrester ; Alice M. Harrison.

1904.—Leonard E. Harvey.

1905.—K. Helen Arthur ; Edith A. Ayres ; Phœbe Clare ; Kate M. Nickson.

1906.—Alice M. Ashley ; Ethelwyn Dilworth-Harrison ; Ella Wyse.

1907.—Norman B. Hyde ; Alice M. Rayner ; Margaret Vaughan.

C.—MISCELLANEOUS WORK IN THE COUNTY.

GENERAL CONDITIONS WITH RESPECT TO INSTRUCTION BY MEMBERS OF THE COUNTY STAFF.

The Agricultural Committee is prepared, so far as is practicable, to place the services of the County Staff of Lecturers in Agriculture, Horticulture, Butter-making, Cheesemaking, and Poultry-keeping, at the disposal of Local Higher Education Committees, Agricultural Societies, Farmers' or Horticultural Associations. A definite application (endorsed " Agriculture ") for the services of one or more of the County Staff must be forwarded to the Director of Education.

As only a limited number of lectures can be given in each subject, applications should, as far as possible, be sent in early in September, 1912, as all applications will be dealt with in the order in which they are received.

Wherever arrangements are made for securing the services of a member of the County Staff for any subject, no fee nor payment on account of travelling or other personal expenses of the Lecturer in that subject will be required from the Local Committee, Association, &c. The County Committee is also prepared to print the necessary handbills, which must be distributed by the Local Authority, and it is hoped that an effort will be made, in every case, to make the lecture as widely known as possible.

No fees, as are required by the Regulations of the Higher Education Committee, need be charged to Students for occasional Lectures in Agricultural subjects.

The Staff Lecturers are prepared to bring an oil lantern for the purpose of illustrating those lectures which are marked in the following lists with an asterisk (*), but the Local Committee must provide a sheet or a whitewashed wall on which to show the pictures. The Local Committee may also provide a Lantern and Manipulator, but *no allowance will be made by the County Committee for any expenses incurred.*

1.—LECTURES IN AGRICULTURE.

Lecturers :—

Thomas Milburn, Ph.D., N.D.A., N.D.D.
R. C. Gaut, M.Sc., N.D.A., N.D.D.
A. W. Patten, B.Sc., N.D.D., A.C.P.

The Agricultural Committee will consider applications from Local Committees, Agricultural Societies, or Farmers' Associations for Lectures, to be given between October, 1912, and the beginning of March, 1913.

Admission to these Lectures *shall be free.* Local Committees are expected to furnish the Agricultural Committee with a *short report* of each Lecture, and to state the number present thereat. The Agricultural Committee pays the whole of the Lecturer's travelling and other personal expenses.

When making application for the services of the Lecturers, the following particulars should be given :—

(*a*) Names of places at which it is proposed to have the Lectures.

(*b*) The number of Lectures required at each place.

(*c*) The subjects of the Lectures, which may be selected from the following list :—

List of Subjects for Agricultural Lectures.

1.—Principles underlying the cultivation of Arable Land.
2.—How Crops obtain their food.
*3.—Lime and the importance of its application to the soil.
4.—Farmyard Manure — Its composition, storage, and application.
5.—Artificial Manures — Their composition, valuation, and application.
*6.—Artificial Manures—Their effects on Crops.
7.—Principles underlying the Rotation of Crops.
*8.—Diseases of Farm Crops and their prevention.
*9.—Weeds and their eradication.
*10.—Potatoes—Varieties, selection of seed, boxing, &c.

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* The Lectures marked with an asterisk can be illustrated by means of Lantern Slides. For conditions see page 52.

*11.—Potatoes—Manuring, diseases, storing, &c.
12.—Swedes and Mangels—Varieties, manuring, diseases, &c.
*13.—Wheat—Varieties, manuring, diseases, &c.
*14.—Oats—Varieties, manuring, diseases, &c.
15.—Farm Seeds and their impurities.
*16.—Pastures—Herbage, manuring, &c.
*17.—Meadows—Herbage, manuring, &c.
18.—Plant Breeding.
*19.—Insects injurious to Root Crops.
*20.—Insects injurious to Corn Crops.
*21.—Insects and Parasites injurious to Farm Animals.
22.—Feeding Stuffs—Their composition and valuation.
23.—Feeding of Dairy Cattle.
24.—Feeding of Pigs.
25.—Milk—Its nature, composition, and why it may sometimes convey disease. Natural changes which take place in milk.
26.—Effect of cold, heat, pasteurization, and sterilization upon the germs in milk; preservatives, and their action.
27.—Cleanliness—Its importance in Dairy Work.
28.—How to improve the quality of milk.
29.—Milk Records.
30.—Lancashire Cheesemaking.

2.—FIELD TRIALS AND DEMONSTRATION PLOTS.

The Agricultural Committee is prepared to receive applications from Local Higher Education Committees, Farmers, Agricultural Societies, or Farmers' Associations, for Grants in aid of Practical Experiments in Agriculture, on condition that all experiments be carried out under the direction of the Secretary of Agriculture.

3.—LIST OF FARMERS' BULLETINS.

The following Farmers' Bulletins dealing with experiments have been issued from the Agricultural Department, and copies may be had free (except those marked out of print) on application :—

1. Liming of Meadow Land. (Out of print.)
2. Manuring of Ryegrass and Clover. (Out of print.)
3. The Potato Crop. (Out of print.)

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* The Lectures marked with an asterisk can be illustrated by means of Lantern Slides. For conditions see page 52.

4. Destruction of Charlock in Corn Crops. (Out of print.)
5. Feeding of Dairy Cattle. (Out of print.)
6. Liming of Meadow Land. (Second Report.) (Out of print.)
7. Manuring of Oats after Seeds. (Out of print.)
8. Liming of Meadow Land. (Third Report.) (Out of print.)
9. Summer Feeding of Dairy Cattle.
10. Seed Potatoes.
11. Manuring of Wheat after Roots.
12. Manuring of Rye.
13. Manuring of Potatoes.
14. Milk Tests and Records.
15. Manuring of Ryegrass and Clover.
16. Manuring of Swedes.
17. Liming of Meadow Land (Fourth Report).
18. Varieties of Oats.
19. Manuring of Mangels.
20. Nitrogenous Manures.
21. Milk Tests and Records, 1908-09-10.
22. Renovation of Poor Pasture Land.

4.—List of Leaflets.

The following leaflets have been compiled for distribution at the lectures in the County. Copies may be had free on application.

1. Notes on Lime and Liming.
2. Destruction of Charlock in Corn Crops.
3. Notes on Artificial Manures.
4. Manuring of Potatoes.
5. Manuring of Wheat and Oats.
6. Feeding Stuffs.—Composition, selection, &c.
7. Purchase and Use of Food Stuffs.
8. Insects injurious to Corn Crops.
9. Insects Injurious to Root Crops.

5.—Advisory Work in Agriculture.

The Committee is also desirous that, so far as opportunity permits, the services of the Lecturers in Agriculture shall be placed at the disposal of Farmers for giving advice, personally or by letter (*free of charge*), on matters pertaining to Agriculture.

(a) *Comparison of Manures and of Food Stuffs.*—Farmers wishing to have a comparison of the value of any two or more food stuffs or manures, may obtain the same by sending a statement as to the price per ton and the analysis as invoiced in each case.

(b) *Manuring of Crops.*—Advice will be given on request regarding the above, but full particulars as to the nature of the soil and previous cropping must be sent with the application.

(c) *Diseases and Insect Pests of the Farm.*—Plants suffering from diseases and insect pests will be examined and advice given as to preventive and remedial measures on receipt of specimens of the attacked plants. Specimens should be packed in boxes so as to arrive in as fresh a condition as possible.

(d) *Spraying of Potatoes and Charlock.*—Advice will be given on the above, and the County Council Charlock Sprayer will be lent to a limited number of applicants.

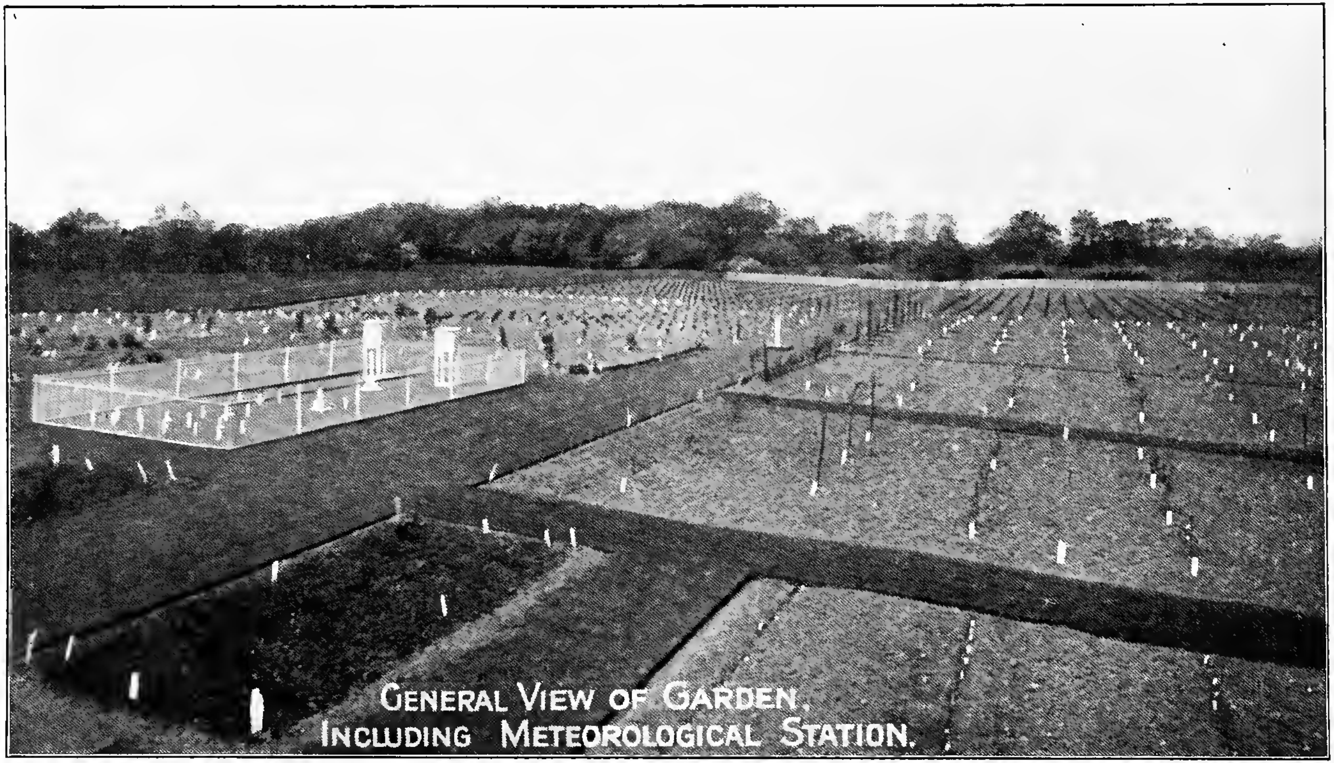
(e) *Visits to farms.*—Arrangements can be made for a member of the staff of the Agricultural Department to pay visits to farms, and give advice regarding the manuring and general treatment of the land.

6.—INSTRUCTION IN HORTICULTURE.

Lecturer—A. G. Sowman.

The Agricultural Committee is prepared to consider applications for the services of the County Lecturer in Horticulture, not only for the delivery of Lectures, but also for visits to orchards and gardens, with a view to giving advice (*free of charge*) as to their improvement.

The Agricultural Committee pays the whole of the Lecturers' travelling and other personal expenses. Admission to the Lectures and Demonstrations *shall be free.* The Local Committee is expected to forward a short report of each Lecture, and to state the numbers present thereat.



General View of Garden,
Including Meteorological Station.

When making application for the services of the Lecturer, the following particulars should be given :—

(*a*) The names of the places at which it is proposed to have the Lectures.
(*b*) The number of Lectures required in each place.
(*c*) The subjects of the Lectures, which may be selected from the following list :—

List of Subjects for Horticultural Lectures.

1.—Soils and their Preparation.—Draining, trenching, digging, &c.
*2.—Manuring of Garden Crops.
*3.—Plant Propagation by stem, root, leaf cutting, layering, &c.
4.—Grafting and Budding (Practical).—[*Students should bring knives with them.*]
5.—Culture of Large Fruit.
6.—Culture of bush and soft Fruits.
7.—Culture of Peas, Beans, edible-stemmed, and tap-rooted vegetables.
*8.—Insect Pests and Diseases affecting Garden Crops, with recipes for cure or prevention.
9.—Garden Flowers.—Their culture and management.
10.—Window Plants.—Their culture and management.

Out-door Demonstrations.

Where the use of a suitable garden can be obtained, the following Out-door Demonstrations may be given :—

1.—During March and April.—Grafting and Pruning.
2.—During May, June, and July.—Plant Propagation and Potting.
3.—During July and August.—Rose-budding, Summer Pruning, &c.

7.—List of Horticultural Leaflets.

The following leaflets have been compiled for distribution at the lectures in the County. Copies may be had free on application.

1. Management of Garden Soils.
2. Manuring of Garden Crops.
3. Flowers.

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* The Lectures marked with an asterisk can be illustrated by means of Lantern Slides. For conditions see page 52.

4. Insect pests affecting Vegetable and Fruit Crops.
5. Fungoid Pests affecting Garden Crops.
6. Culture of Apple, Pear, &c.
7. Culture of Small Fruit.
8. General Principles of Pruning.

8.—INSTRUCTION IN POULTRY-KEEPING.

Lecturer—C. H. Dobbin.

The Agricultural Committee is prepared to consider applications for the services of the Lecturer in Poultry-keeping, not only for the delivery of Lectures but also for visits to poultry-runs, with a view to giving *advice free of charge.* The Lecturer's travelling and other personal expenses will be paid by the Agricultural Committee. Admission to the Lectures *shall be free.* The Local Committee is expected to furnish a short report on each Lecture, and to state the number present thereat.

When making application for the services of the Lecturer, the following particulars should be given :—

(*a*) The names of the places at which it is proposed to have the Lectures.

(*b*) The number of Lectures required in each place.

(*c*) The subjects of the Lectures, which may be selected from the following list:—

List of Subjects for Poultry Lectures and Demonstrations.

*1. Selection and Breeding of Poultry for Egg Production.
*2. Foods and Methods of Feeding.
*3. Houses and Housing.
*4. Natural and Artificial Incubation.
*5. Natural and Artificial Rearing.
*6. Management of Fowls for Winter Egg production.
*7. Breeding, Fattening, and Marketing of Table Poultry.
8. Breeding and Fattening of Ducks.
9. Breeding and Fattening of Turkeys.
*10. Management of Birds in confined runs.
11. Diseases of Poultry.
12. Demonstration in Trussing.

NOTE.—A leaflet "Food Rations for Poultry" has been issued, and can be had on application to the Director of Education, County Offices, Preston.

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* The Lectures marked with an asterisk can be illustrated by means of Lantern Slides. For conditions see page 52.

9.—INSTRUCTION IN BEE-KEEPING.

The Agricultural Committee has arranged with the Lancashire Bee-keepers' Association for the delivery of a limited number of Lectures on Bee-keeping in various parts of the County. Application may be made to the Director of Education, or to Mr. W. H. Martin, Secretary of the Lancashire Bee-keepers' Association, Thurston Lea, Cambridge Road, Southport.

10.—VETERINARY LECTURES.

The Agricultural Committee is prepared to receive applications for Lectures in Veterinary Science, and to pay the fee—not exceeding one guinea per lecture—to the Lecturer, and also to print the necessary bills. The Local Committee must nominate the Lecturers, and arrange with them as to the dates of the lectures. Other expenses than those mentioned above must be borne by the Local Committee, Association, &c.

11.—MIGRATORY BUTTER CLASSES.

Instructress—Miss Myerscough, N.D.D.

The Agricultural Committee is prepared to provide the services of an Instructress in Butter-making free of cost. The Agricultural Committee will also supply the necessary utensils to carry on Classes in farm-houses or other suitable places. All other expenses for rent, water, cleaning, &c., must be provided locally. The number of pupils allowed to attend such Classes is not less than six nor more than eight; and they must be *residents* in the Administrative County. The instruction given at these Classes comprises the Separation and Ripening of Cream, Butter-making, and Soft Cheese-making.

The Instructress will be prepared to visit, on invitation, any farms within reasonable distance of the place where the Classes are being held, in order to advise on Dairy Management, and will also test the milk—for private use only—from local farms for the purpose of ascertaining the butter-fat contained therein, *both free of charge.*

NOTE.—Arrangements may be made for Evening Lectures on Milk, its production, storage, and disposal; they will be delivered by Miss Myerscough or by other members of the County Agricultural Staff. (See page 54.)

12.—INSTRUCTION IN CHEESE-MAKING.

Instructors—J. Gornall.
R. Richardson, N.D.A.

The Agricultural Committee is prepared to send an Instructor in Cheese-making to farm-houses, situated within the Administrative County, during the season *free of cost*, on condition that he receives free board and lodgings. He will give instruction in Lancashire Cheese-making, and advise on the Management of Cheese Dairies.

13.—MILK TESTS AND RECORDS.

The Committee consider that it is unnecessary to continue the recording of milk yields from herds in the County, as the great advantages to be derived therefrom have been fully demonstrated. Full details regarding the results obtained may be found in Bulletin No. 17—Milk Tests and Records. (See page 55.)

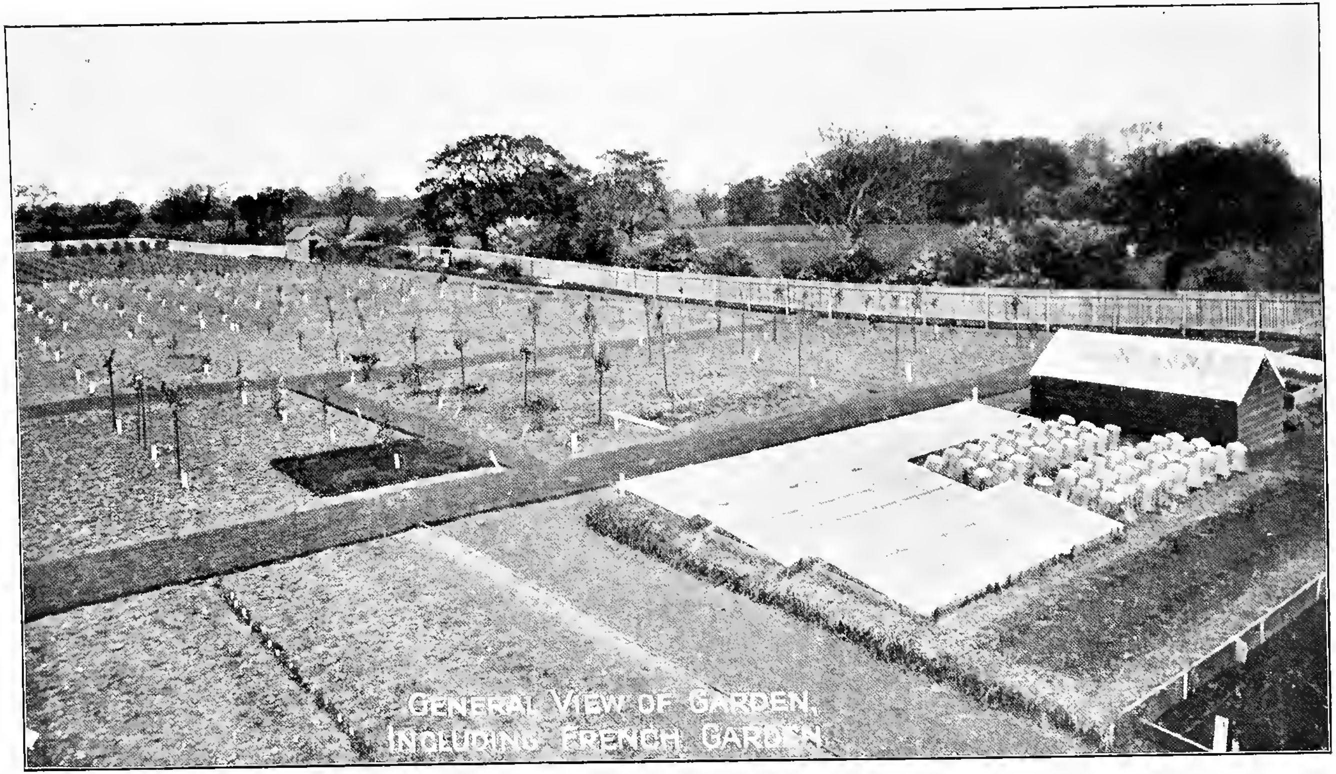
14.—SIXPENNY MILK TESTS AT THE COUNTY COUNCIL FARM, HUTTON.

Samples of Milk may be forwarded by *residents* of the Administrative County to the County Council Farm, Hutton, near Preston, for examination for the percentage of butter-fat.

A Certificate will be issued, at a charge of 6d. per sample examined, with respect to the percentage of butter-fat, on the understanding that the Certificate is for the private use of the sender only, and is not to be used for or against him (or her) in any court of law.

Instructions for Taking Samples.

A. *Testing the Milk of One Cow.*—The sample should be taken immediately after the cow has been milked. To ensure thorough mixing, the milk should be poured from one vessel into another several times, and a small quantity then quickly removed and immediately transferred to a clean bottle, capable of containing at least a quarter of a pint. The bottle should then at once be corked and sealed.



GENERAL VIEW OF GARDEN, INCLUDING FRENCH GARDEN.

B. *Testing Mixed Milk.*—In taking a sample from the milk of a herd it is often impracticable to mix the milk by pouring it from vessel to vessel. The sampling may then be done by using a strong glass tube, obtainable from any chemist, of about three-eights of an inch bore, and open at both ends. The tube must be sufficiently long to reach the bottom of the pail, and should be slowly passed perpendicularly into the can until it touches the bottom. If this is done carefully, it will then be found that the milk in the tube stands at the same level as the milk outside. The *upper* end of the tube should then be firmly closed with the thumb, when, if the tube is carefully withdrawn, the column of milk will remain in the tube, and may be emptied into a clean bottle by gently releasing the thumb so as to admit air. Samples taken in this way from all the pails should be thoroughly mixed in the same way as the sample from a single cow.

If a glass tube is not available, the milk must be mixed thoroughly by pouring from vessel to vessel; stirring it is not enough.

The bottle in which the milk is sent should be full, and a label should be affixed to it, bearing the name of the sender, full postal address, and the date on which the sample was taken.

The bottles should be packed with care and addressed :—Dairy Department, County Council Farm, Hutton, near Preston.

D.—ANALYTICAL DEPARTMENT.

The Agricultural Committee has entered into arrangements with the Council of the Harris Institute, Preston, to make Analyses of Manures, Feeding Stuffs, Soils, Waters, and Dairy Produce at especially low fees for farmers living in the Administrative County of Lancaster.

SPECIAL FEES FOR ANALYSES PAYABLE BY FARMERS.

The following Fees for Analyses will be payable by Farmers residing in the Administrative County of Lancaster, provided that such Analyses and reports be required for *bona-fide* agricultural purposes, and for the private information only of the Farmer applying for them; and they are not conducted for the use of manufacturers or merchants.

In the event of any Analysis or report showing a manure or feeding stuff to be either impure or below the guarantee given by the purchaser, the latter is at liberty to show such report and Analysis to the vendor ; but if the material proves to be up to the guarantee given, the Analysis and report must *not* be communicated to either vendor or manufacturer.

No money value of a manure or feeding stuff will be assessed, but if the Farmer names the price charged, the cost of carriage, and any other items which influence the cost, the Analyst will say whether the material be worth the sum charged.

In the event of any report being misused, the Farmer shall be called upon to pay to the Principal of the Harris Institute, the Analyst's ordinary fee of one or two guineas.

LIST OF FEES.

	£	s.	d.
1.—Determination of the percentage of Nitrogen in a Sample of Sulphate of Ammonia, Shoddy, Horn Dust, Dried Blood, or other Nitrogenous Manure...	0	2	6
2.—An Analysis of a Sample of Nitrate of Soda ...	0	2	6

	£	s.	d.
3.—Determination of the percentage of Soluble Phosphates in a Sample of Mineral Superphosphate or in any other Manure	0	2	6
4.—Determination of the percentage of Insoluble Phosphates in a Sample of Basic Slag (Thomas' Phosphate Powder), or in any other Manure	0	2	6
5.—Determination of the percentage of Soluble and Insoluble Phosphates in any Manure	0	3	6
6.—Determination of the percentage of Nitrogen, together with the Soluble *or* Insoluble Phosphates in any Manure (such as Bone Meal, &c.)	0	3	6
7.—Determination of the percentage of Nitrogen, together with the Soluble *and* Insoluble Phosphates in any Manures (such as Dissolved Bones, Compound Manures, &c.)	0	5	0
8.—Determination of the percentage of Potash in Sulphate or Muriate of Potash, or in Kainit... ...	0	2	6
9.—Determination of the percentage of Lime in Limestone or Marl	0	3	6
10.—Determination of the percentage of Lime, Magnesia, and Phosphoric Acid in Limestone or Marl ...	0	5	0
11.—Determination of the percentage of the essential constituents in a Feeding Stuff (Oilcakes, Meals, &c.)...	0	5	0
12.—A *Complete* Analysis of any Manure or Feeding Stuff ... ...10s. to	1	0	0
13.—A *Partial* Analysis (Nitrogen, Phosphates, Potash, and Carbonate of Lime) of a Sample of Soil ...	0	10	0
14.—A *Complete* Analysis of a Sample of Soil	1	10	0
15.—Determination of the Hardness of a Sample of Water	0	3	6
16.—An Analysis of a Sample of Water to determine its suitability for domestic purposes	0	10	6
17.—Analysis of a Sample of Milk, Butter, or Cheese ...	0	5	0

Note.—(1) Fees for other determinations will be given on application.

(2) All Fees must be paid at the time of sending the sample to the Principal, Harris Institute, Preston.

INSTRUCTIONS FOR SELECTING OR SENDING SAMPLES FOR ANALYSIS.

ARTIFICIAL MANURES.

Take a large handful from several of the bags, break down any lumps with the hand, and mix the whole well on a large sheet of paper. From the heap select six small portions of about 4 oz. each, and, after mixing these thoroughly, put the mixture into a clean, dry, wide-necked bottle, with a well-fitting cork or stopper, or into a well-fitting clean tin box. Samples for analysis should upon no account be merely put up in paper.

SOILS.

Dig a little trench about two feet deep, exposing the soil and subsoil. Cut from the side of this trench vertical scrapings of the soil down to the top of the subsoil. Catch these on a clean board, and collect in this manner about one pound weight of soil taken from the whole surface of the section. Similar scrapings of subsoil immediately below should be taken and preserved separately. Five or six similarly drawn samples should be taken from different parts of the field, and kept separate while being sent to the analyst, that he may examine them individually before mixing in the laboratory.

WATERS.

The water should be sent in a perfectly clean Winchester quart bottle, made of clear glass, and with a well-fitting glass stopper, which is readily obtained at any chemist's shop, or the same will be supplied, ready for use, on application to the Principal of the Harris Institute—the carriage to be paid by the sender of the water. The sample bottle should be rinsed out twice with the water to be analysed before being filled. Well water should be allowed to run for some time before the sample is drawn. Standing water from cisterns, ponds, &c., should be sampled by immersing the bottle entirely under the water, and holding it, neck upwards, about four inches below the surface. Spring or stream water should be sampled in dry weather, by immersion, if possible ; but, if not deep enough for that, a perfectly clean cup or glass should be used for transferring the water to the bottle. When the bottle has been filled, the stopper should be rinsed in the water before being replaced, securely tied down with a piece of clean calico or cotton cloth and sealed. For determination of the degree of hardness only one quart wine bottle of the water is required ; this bottle must also, of course, be perfectly clean.

N.B.—Samples should be dated and despatched to the laboratory immediately after being taken.

It ought to be unnecessary to add that the water supply of every farm should be above suspicion.

LIMESTONE, MARLS, IRONSTONES, AND OTHER MATERIALS.

Whole pieces, weighing from 4 to 8 oz., should be sent. These may be enclosed in small linen bags or wrapped in paper if there is no tin at hand.

OIL CAKES.

Take three strips (of the entire breadth of the cake) from the middle of three whole cakes, breaking the latter into two halves for the purpose. The three strips should then be packed in a tin, and the latter dated, labelled, and sealed down.

FEEDING MEALS.

Samples of these should be taken in the same manner as samples of manure, and put into tins. About 4 to 6 oz. are sufficient for an analysis.

All communications referring to analyses must be addressed to the Principal, Harris Institute, Preston, and, on forwarding samples, *separate* letters should be sent specifying the nature of the information required, and, if possible, the object in view.

Forms of application to attend the various Courses of Instruction are appended. These should be filled in, detached and forwarded to the Director of Education by intending Students. Additional copies of these forms may be obtained, if required, on application.

H. LLOYD SNAPE,
Director of Education.

County Offices, Preston,
June, 1912.

APPLICATION TO ENTER THE DAIRY OR POULTRY SCHOOL

At the County Council Farm, Hutton, near Preston, by a *Resident* of the Administrative County of Lancaster, who is the son or daughter of a *bona-fide farmer, farm labourer*, or whose parents are closely connected with Agriculture.

..............*day of* ....191...

Junior
I hereby apply for permission to enter for a *Advanced* Course of
Diploma

Strike out the words not applicable.

Dairy
Instruction at the County Council School, and undertake to
Poultry

remain at the School for a period of not less than.............weeks; and I undertake to pay, *in advance*, the sum of Seven Shillings and Sixpence per week towards my board and lodgings.

I also undertake to attend the Classes regularly, and to conform to all the Regulations and Conditions laid down by the Agricultural Sub-Committee; and should I fail to remain for the full Course, or fail to sit for the Examinations, I agree to pay the fees chargeable for shorter Courses. (See page 13 of the Scheme.)

I enclose a Certificate as to Character, and will forward the Vaccination Certificate later.

Full Name...*Age*.......

Address ....

....

Occupation ....

*Parent's *Occupation*.. **State fully.*

....

....

Declaration by the Overseer.

Parent
I hereby declare that..................................the
Guardian
of the applicant has been *resident* within the Administrative County of Lancaster during the past six months.

Strike out the word which is not applicable.

Signed ....
**Overseer or*
Assistant Overseer for the..........................

....

**The Overseer for a County Borough must not sign this Form.*

To the Director of Education,
County Offices, Preston.

APPLICATION TO ENTER THE DAIRY OR POULTRY SCHOOL

At the County Council Farm, Hutton, near Preston, by a *resident* of the Administrative County of Lancaster, whose Parents or Guardians are *not* farmers, or otherwise closely connected with Agriculture.

...........*day of*.......................191...

Strike out the words not applicable.

I hereby apply for permission to enter for a *Junior*
Advanced Course
Diploma
of Instruction at the County Council *Dairy*
Poultry School, and undertake to remain at the School for a period of not less than.......... weeks ; and I undertake to pay, in advance, the sum of Twenty-two Shillings and Sixpence per week towards my board, lodgings, and tuition.

I also undertake to attend the Classes regularly, and to conform to all the Regulations and Conditions laid down by the Agricultural Committee ; and should I fail to remain at the School for the full Course, or fail to sit for the Examination, I agree to pay the fees chargeable for shorter Courses. (See page 13 of the Scheme.)

I enclose a Certificate as to Character, and will forward the Vaccination Certificate later.

Full Name ....*Age* ....

Address...

....

Occupation..

Parent's Occupation...

Declaration by the Overseer.

Strike out the word which is not applicable.

I hereby declare that.................................the *Parent*
Guardian
of the applicant has been *resident* within the Administrative County during the past six months.

Signed...
**Overseer or*
Assistant Overseer for the..........................

....

**The Overseer for a County Borough must not sign this Form.*

To the Director of Education,
County Offices, Preston.

APPLICATION TO ENTER THE DAIRY OR POULTRY SCHOOL

At the County Council Farm, Hutton, near Preston, by one who is NOT a *Resident* in the Administrative County of Lancaster.

...........*day of* ....191......

I hereby apply for permission to enter for a *Junior* *Advanced* *Diploma* Course of Instruction at the County Council *Dairy* *Poultry* School, and undertake to remain at the School for a period of not less than........... weeks ; and I undertake to pay, *in advance*, the sum of Thirty-two Shillings ond Sixpence per week towards my board, lodging, and tuition.

Strike out the words not applicable.

I also undertake to attend the Classes regularly, and to conform to all the Regulations and Conditions laid down by the Agricultural Committee ; and should I fail to remain for the full Course, or fail to sit for the Examination, I agree to pay the fees chargeable for shorter Courses. (See page 13 of this Scheme.)

I enclose a Certificate as to Character, and will forward the Vaccination Certificate later.

Full Name..*Age* ......

Address ....

....

Occupation ....

Parent's Occupation...

To the Director of Education,
County Offices, Preston.

APPLICATION TO ENTER THE LANCASHIRE COUNTY COUNCIL AGRICULTURAL SCHOOL,

Carried on at the Harris Institute, Preston, by a *Resident* of the Administrative County of Lancaster, who is a son or daughter of a *bona-fide Farmer*, *Farm Labourer*, or whose parents are closely connected with Agriculture.

....day of ....191......

I hereby apply for permission to enter for the Course of Instruction at the County Council Agricultural School, Harris Institute, Preston, commencing on the 24th day of September, 1912, and I undertake to attend all the Day Classes regularly to the satisfaction of the Agricultural Sub-Committee of the Lancashire Education Committee, and also any additional Classes that the Director of Education may consider necessary, and to sit for all the Examinations held during the Session.

I intend to board and lodge in Preston.

I intend to travel daily from..to Preston.

Strike out whichever Clause is not applicable.

*I enclose Certificates as to Character and practical Farm Work, and agree to conform to all the Rules and Regulations laid down by the Agricultural Sub-Committee.

Full Name..*Age*...........

Address..

....

Occupation..

*Parent's Occupation**.. **State fully.*

....

....

Declaration by the Overseer.

I hereby declare that..the *Parent* / *Guardian* of the applicant has been *resident* within the Administrative County of Lancaster during the past six months.

Strike out the word not applicable.

Signed..

†*Overseer or*
Assistant Overseer for the..

Certificate of Cost of Contract Ticket.

I hereby certify that..will require to pay

£ : : , being the actual cost of a Third Class Contract Ticket

between Preston and..from September 24th, 1912, to April 4th, 1913.

Signed:..
On behalf of the Railway Company.

To the Director of Education,
County Offices, Preston.

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*These Certificates will only be required from Students entering the Classes for the first time.
†The Overseer for a County Borough must not sign this Form.

APPLICATION TO ENTER THE LANCASHIRE COUNTY COUNCIL AGRICULTURAL SCHOOL,

Carried on at the Harris Institute, Preston, by a *Resident* of the Administrative County of Lancaster, whose Parents or Guardians are *not* Farmers, nor otherwise closely connected with Agriculture.

....day of......................... ..191...

I hereby apply for permission to enter for the Course of Instruction at the County Council Agricultural School, Harris Institute, Preston, commencing on the 24th day of September, 1912, and I undertake to attend all the Day Classes regularly to the satisfaction of the Agricultural Sub-Committee of the Lancashire Education Committee, and also any additional Classes that the Director of Education may consider necessary, and to sit for all the Examinations held during the Session.

I further agree to pay, *in advance*, the sum of £3 3s. per Session for tuition.

I intend to board and lodge in Preston.

I intend to travel daily from..to Preston

Strike out whichever Clause is not applicable.

*I enclose Certificates as to Character and practical Farm Work, and agree to conform to all the Rules and Regulations laid down by the Agricultural Sub-Committee.

Full Name.. *Age*.........

Address..

....

Occupation...

Parent's Occupation...

Declaration by the Overseer.

I hereby declare that...the *Parent* / *Guardian* of the applicant has been *resident* within the Administrative County during the past six months.

Strike out the word not applicable.

Signed ....

†*Overseer or*
Assistant Overseer for the...

....

Certificate of Cost of Contract Ticket.

I hereby certify that...will require

to pay £ : : , being the actual cost of a Third Class Contract Ticket

between Preston and.., from September 24th, 1912, to April 4th, 1913.

Signed ....
On behalf of the Railway Company.

To the Director of Education,
County Offices, Preston.

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* The Certificates will only be required by Students entering the Classes for the first time.

† The Overseer for a County Borough must not sign this Form.

APPLICATION TO ENTER THE AGRICULTURAL SCHOOL,

by one who is NOT *a resident of the Administrative County.*

..............*day of* ....191......

Sir,

I beg to apply for permission to enter the Classes in Agricultural Subjects, to be held at the County Council Agricultural School, Harris Institute, Preston, commencing on the 24th day of September, 1912.

I hereby undertake to attend all Day Classes regularly, to the satisfaction of the Agricultural Sub-Committee of the Lancashire Education Committee, and to conform to the Rules and Regulations given on pages 27 and 28.

I intend to board and lodge in Preston.

I intend to travel daily from................................to Preston.

Strike out whichever Clause is not applicable.

*I enclose a certificate as to character.

Full Name..*Age*.........

Address..

....

Occupation ....

Parent's Occupation...

For particulars of Fees, see page 31.

To the Director of Education,
County Offices, Preston.

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* This applies only to Students entering the Classes for the first time.